SAMSUNG

MICRO COMPONENT SYSTEM

MM-16

SERVICE Manual

MICRO COMPONENT SYSTEM

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1. Precautions

Follow these safety, servicing and ESD precautions to prevent damage and protect against potential hazards such as electrical shock and X-rays.

1-1 Safety Precautions

1. Be sure that all of the built-in protective devices are replaced.

2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including control knobs and compartment covers.

3. Make sure that there are no cabinet openings through which people--particularly children--might insert fingers and contact dangerous voltages. Such openings include the spacing between the picture tube and the cabinet mask, excessively wide cabinet ventilation slots, and improperly fitted back covers.

4. Design Alteration Warning:
   Never alter or add to the mechanical or electrical design of the unit. Example: Do not add auxiliary audio or video connectors. Such alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.

5. Leakage Current Hot Check (Figure 1-1):
   Warning: Do not use an isolation transformer during this test. Use a leakage-current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, *Leakage Current for Appliances*), and Underwriters Laboratories (*UL Publication UL1410, 59.7*).

   With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, etc.) and all exposed metal parts. Examples: Handle brackets, metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat.

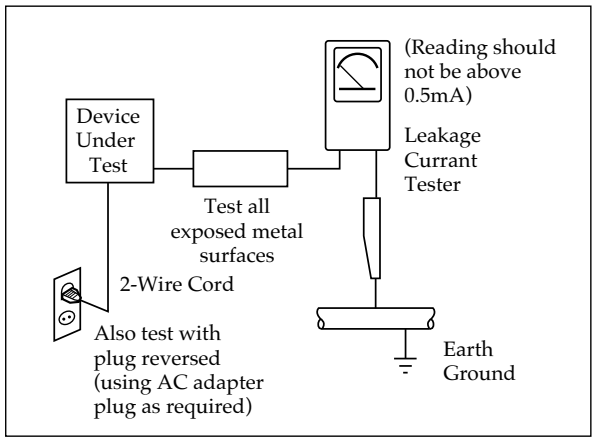

(Reading should not be above 0.5mA)
Device Under Test
Leakage Currant Tester
Test all exposed metal surfaces
2-Wire Cord
Also test with plug reversed (using AC adapter plug as required)
Earth Ground

Fig. 1-1 AC Leakage Test

6. Insulation Resistance Cold Check:
   (1) With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. (2) Set the power switch to ON. (3) Measure the resistance between the shorted AC plug and any exposed metallic parts. Example: Screwheads, antenna, control shafts or handle brackets.

   If any of the exposed metallic parts has a return path to the chassis, the measured resistance should be between 1 and 5.2 megohms. If there is no return path, the measured resistance should be "infinite." If the resistance is outside these limits, a shock hazard might exist. See Figure 1-2

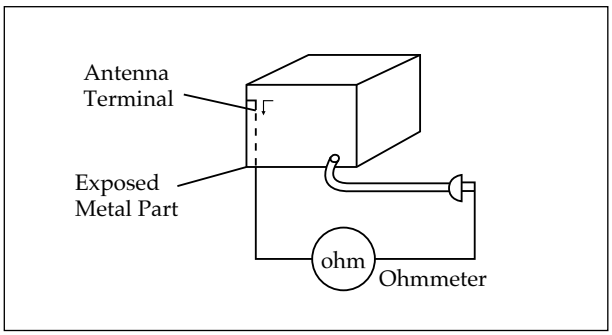


Fig. 1-2 Insulation Resistance Test

1-1 Safety Precautions (Continued)

7. Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards

8. Observe the original lead dress, especially near the following areas: Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that no wires or components touch thermally hot parts.

9. Product Safety Notice:
Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original--even if the replacement is rated for higher voltage, wattage, etc.

10 Components that are critical for safety are indicated in the circuit diagram by shading, ⚠ or ⚠ . Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications. A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

1-2 Servicing Precautions

Warning1: First read the "Safety Precautions" section of this manual. If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precautions.

1. Servicing precautions are printed on the cabinet. Follow them.

2. Always unplug the unit's AC power cord from the AC power source before attempting to: (a) Remove or reinstall any component or assembly, (b) Disconnect an electrical plug or connector, (c) Connect a test component in parallel with an electrolytic capacitor.

3. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring may be clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.

4. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.

5. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).

6. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500V) to the blades of the AC plug.

   The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.

7. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

8. Always connect a test instrument's ground lead to the instrument chassis ground *before* connecting the positive lead; always remove the instrument's ground lead last.

1-3 Precautions for Electrostatically Sensitive Devices (ESDs)

1. Some semiconductor ("solid state") devices are easily damaged by static electricity. Such components are called Electrostatically Sensitive Devices (ESDs). Examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.

2. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. (Be sure to remove it prior to applying power--this is an electric shock precaution.)

3. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.

4. Do not use freon-propelled chemicals. These can generate electrical charges that damage ESDs.

5. Use only a grounded-tip soldering iron when soldering or unsoldering ESDs.

6. Use only an anti-static solder removal device. Many solder removal devices are not rated as "anti-static" (these can accumulate sufficient electrical charge to damage ESDs).

7. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.

8. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

9. Minimize body motions when handing unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an ESD.

1-4 Special Precautions and Warning Labels for Laser Products

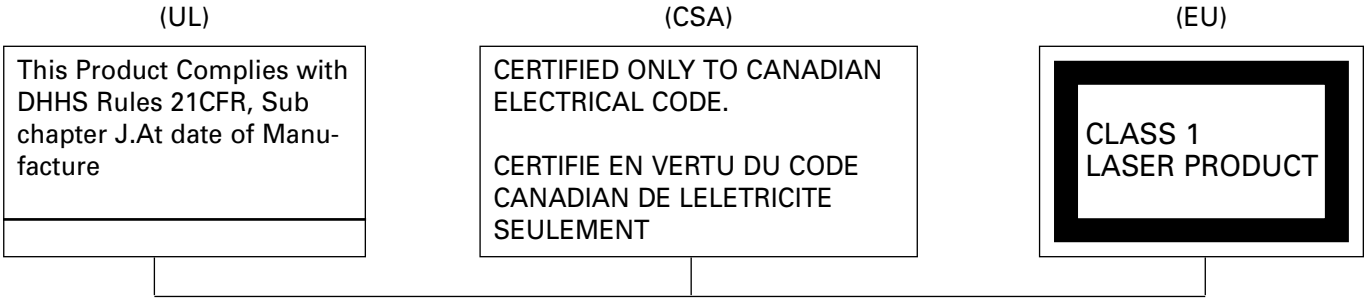

(UL)
This Product Complies with DHHS Rules 21CFR, Sub chapter J.At date of Manu-facture
(CSA)
CERTIFIED ONLY TO CANADIAN ELECTRICAL CODE.
CERTIFIE EN VERTU DU CODE CANADIAN DE LELETRICITE SEULEMENT
(EU)
CLASS 1
LASER PRODUCT

Fig. 1-3 Warning Labels (Location: Enclosure Block)

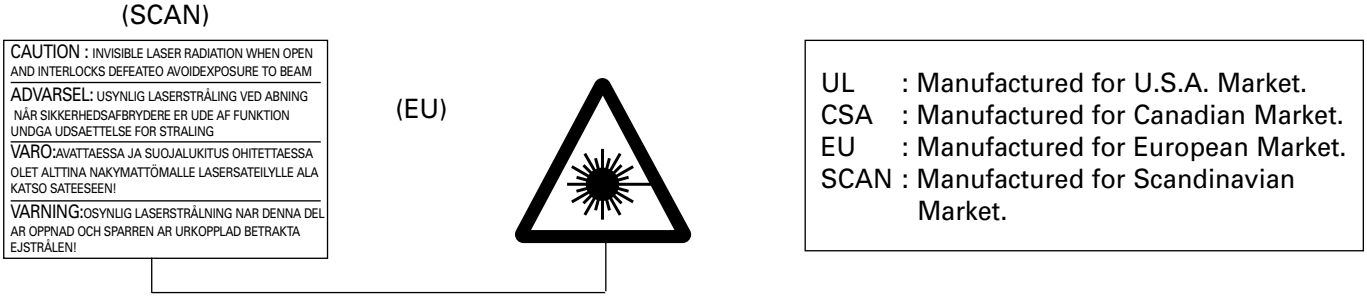

(SCAN)
CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATEO AVOIDEXPOSURE TO BEAM
ADVARSEL: USYNLIG LASERSTRÅLING VED ABNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGA UDSAETTELSE FOR STRALING
VARO:AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTINA NAKYMATTÖMALLE LASERSATEILYLLE ALA KATSO SATEESEEN!
VARNING:OSYNLIG LASERSTRÅLNING NAR DENNA DEL AR OPPNAD OCH SPARREN AR URKOPPLAD BETRAKTA EJSTRÅLEN!
(EU)
UL : Manufactured for U.S.A. Market.
CSA : Manufactured for Canadian Market.
EU : Manufactured for European Market.
SCAN : Manufactured for Scandinavian Market.

Fig. 1-4 Warning Labels (Location: Disc Clamper, Inner Side of Unit Door or Nearby Unit Chassis)

1-4 Special Precautions and Warning Labels for Laser Products (Continued)

1-4-1 Warnings

1. When servicing, do not approach the LASER exit with the eye too closely. In case it is necessary to confirm LASER beam emission, be sure to observe from a distance of more than 30 cm from the surface of the objective lens on the optical pick-up block.

2. Do not attempt to handle the objective lens when the DISC is not on the tray.

1-4-2 Laser Diode Specifications

Material: GaAs+ GaAlAs
Wavelength: 760-800 nm
Emission Duration: Continuous

Laser Output: 0.2 mw (measured at a 1.6 mm distance from the objective lens surface on the optical pick-up block.)

1-4-3 Handling the Optical Pick-up

1. Static electricity from clothing or the body may cause electrostatic breakdown of the laser diode in the Optical Pickup. Follow this procedure:

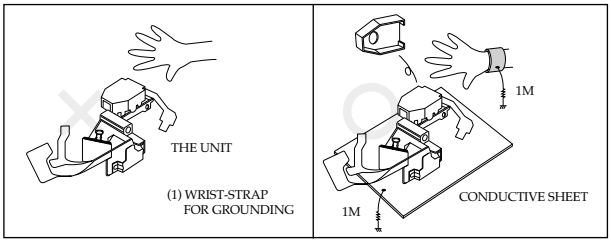
2. Place a conductive sheet on the work bench (i.e., the black sheet used for wrapping repair parts.) Note: The surface of the work bench should be covered by a copper ground plane, which is grounded.

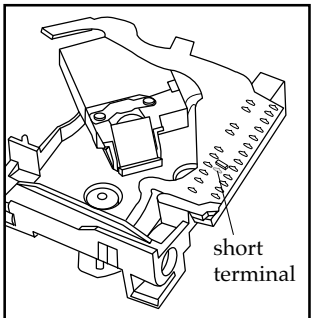
3. The repair technician must wear a wrist strap which is grounded to the copper sheet.

4. To remove the Optical Pickup block: Place the set on the conductive sheet, and momentarily touch the conductive sheet with both hands. (While working, do not allow any electrostatic sources--such as clothes--to touch the unit.)

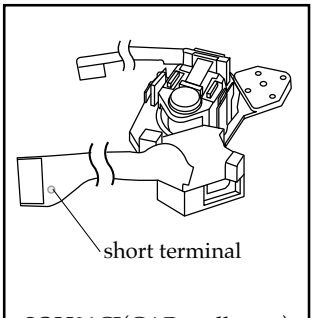
5. Ground the "Short Terminal" (located on the PCB, inside the Pickup Assembly) before replacing the Pickup. This terminal should be shorted whenever the Pickup Assembly is lifted or moved.

6. After replacing the Pickup, reopen the Short Terminal. See diagrams below:

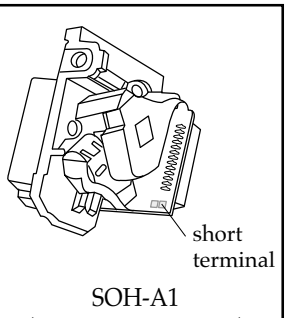




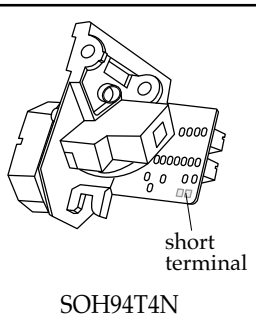
SOH91VI(LDP)



SOH91CI(CAR,walkman)



SOH-A1
(CMS-V10,CMS-V30)



SOH94T4N
(CMS-V10,CMS-V30)

2. Specifications

General		Power source	AC 115/230V 50/60Hz (Option)
		Power consumption	30W
		Dimensions (mm)	162(W)x280(H)x278(D)
Amp		Power output	5W/CH
		Total harmonic distortion	0.5%
		Frequency range	50Hz ~ 17kHz
		Signal to noise ratio	60dB
		Channel separation	45dB
Tuner	FM	Frequency range	87.5 ~ 108MHz
		Usable sensitivity	6μV
		Signal to noise ratio	55dB
		IF rejection ratio	60dB
		Total harmonic distoration	0.5%
		Separation (Stereo)	25dB
	MW	Frequency range	522 ~ 1611KHz
		Usable sensitivity	600μV
		Signal to noise ratio	40dB
		IF rejection ratio	30dB
		Total harmonic distoration	1%
	LW	Frequency range	146 ~ 290KHz
		Usable sensivity	1200μV
		Signal to noise ratio	35dB
Cassette		Frequecny range	125Hz ~ 12.5KHz
		WOW FLUTTER	0.15%
		Erasing effect	50dB
		Signal to noise ratio	40dB
		Total harmonic distortion	2.5%
Compact Disc		Frequency response	20Hz ~ 20KHz(¡ 1dB)
		Signal to noise ratio	85dB(1kHz 0dB)
		Channel separation	75dB(1kHz 0dB)
		Total harmonic distortion	0.1%(1kHz 0dB)

* Specifications are subject to change without notice.

* Remote Control

3. Disassembly and Reassembly

3-1 Cabinet-Top, Cabinet-Rear

1. Remove 8 screws of ① and 5 screws of ② of its rear part.
2. Pull its top part upward vertically as shown in the figure 3-1.

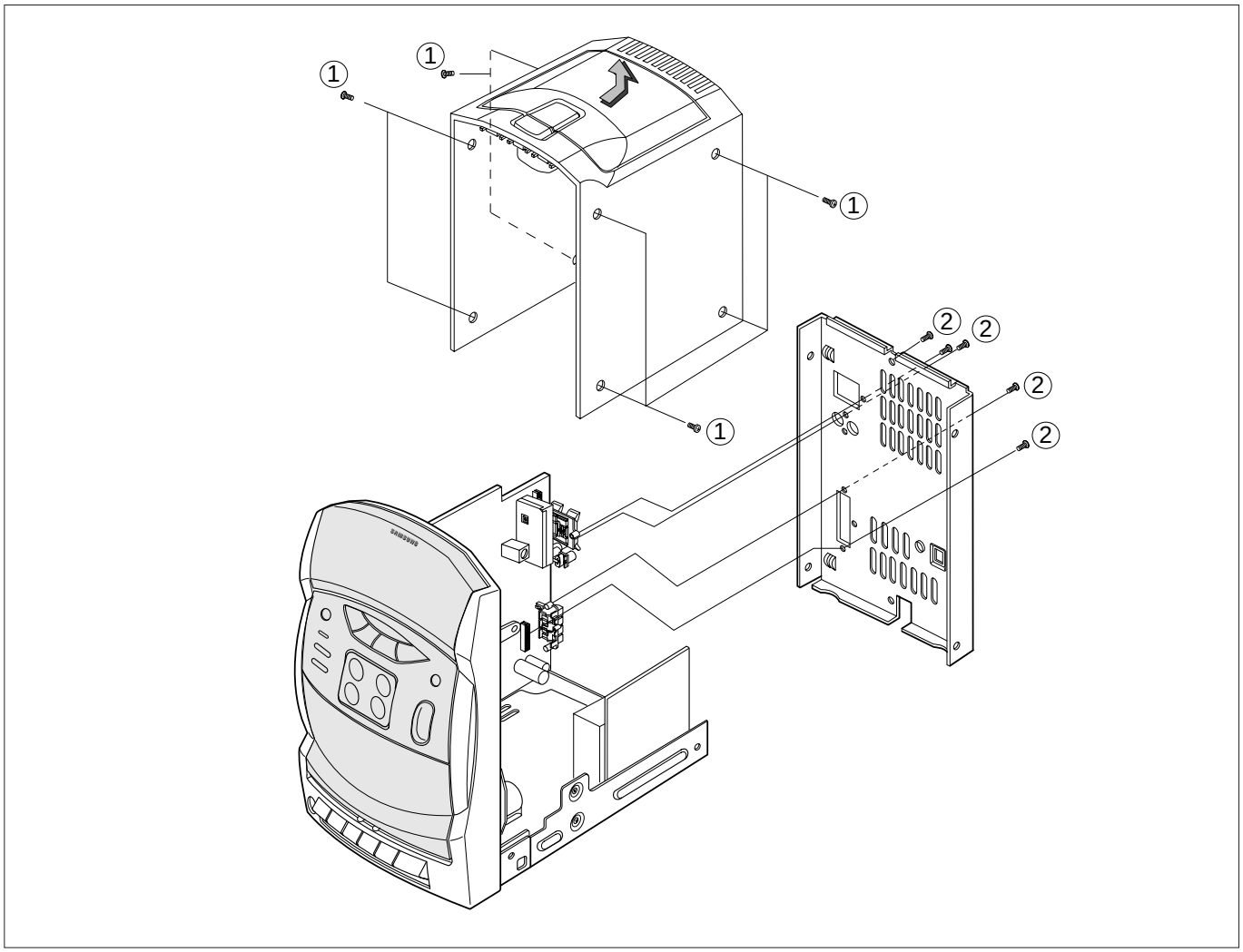


Figure 3-1

3-2 Main-PCB

1. Remove 1 screw of ① and pull out the Main-PCB backward horizontally.

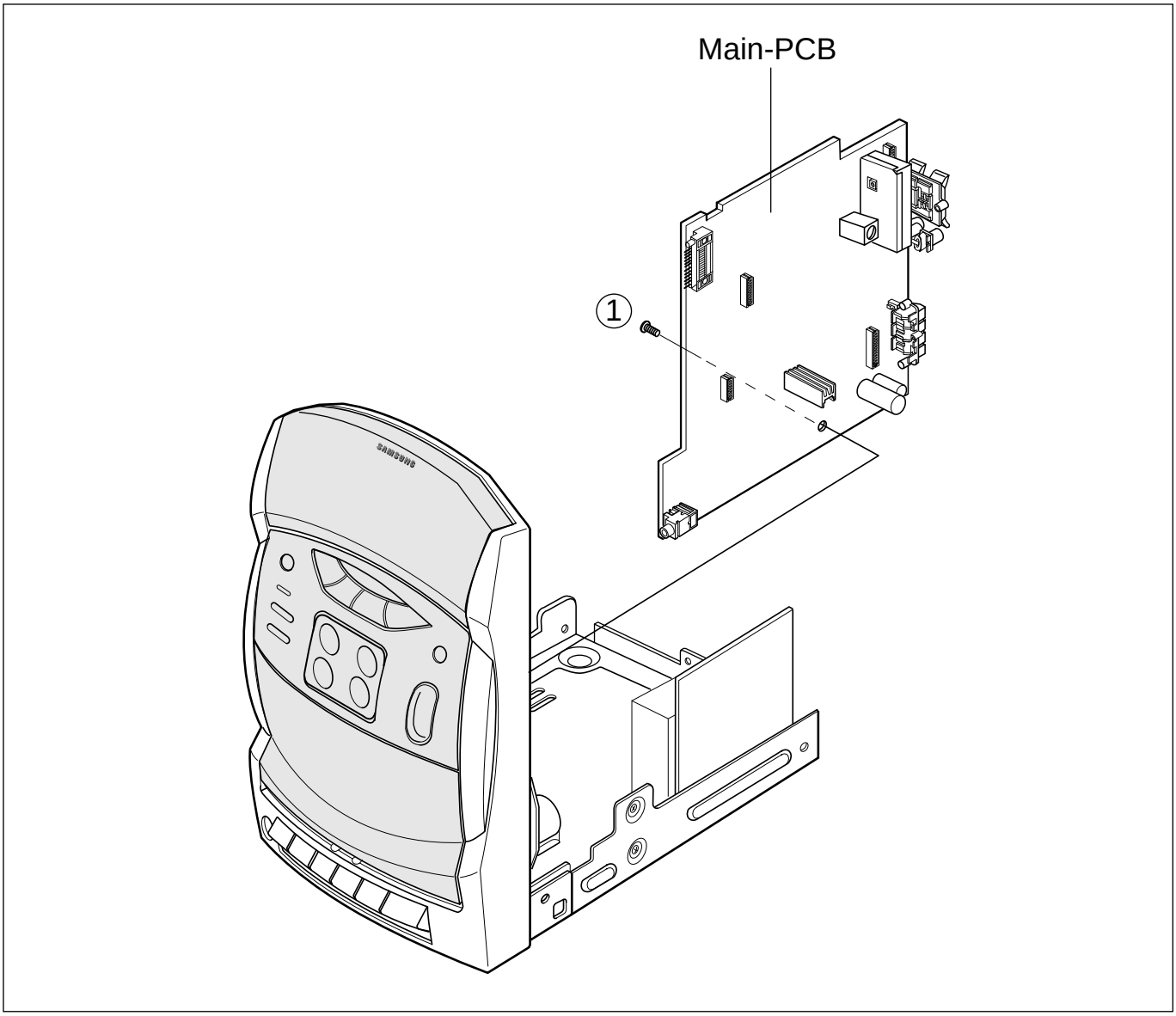


Figure 3-2

3-3 Main-PCB

1. Remove 3 screws of ① and pull it out backward.

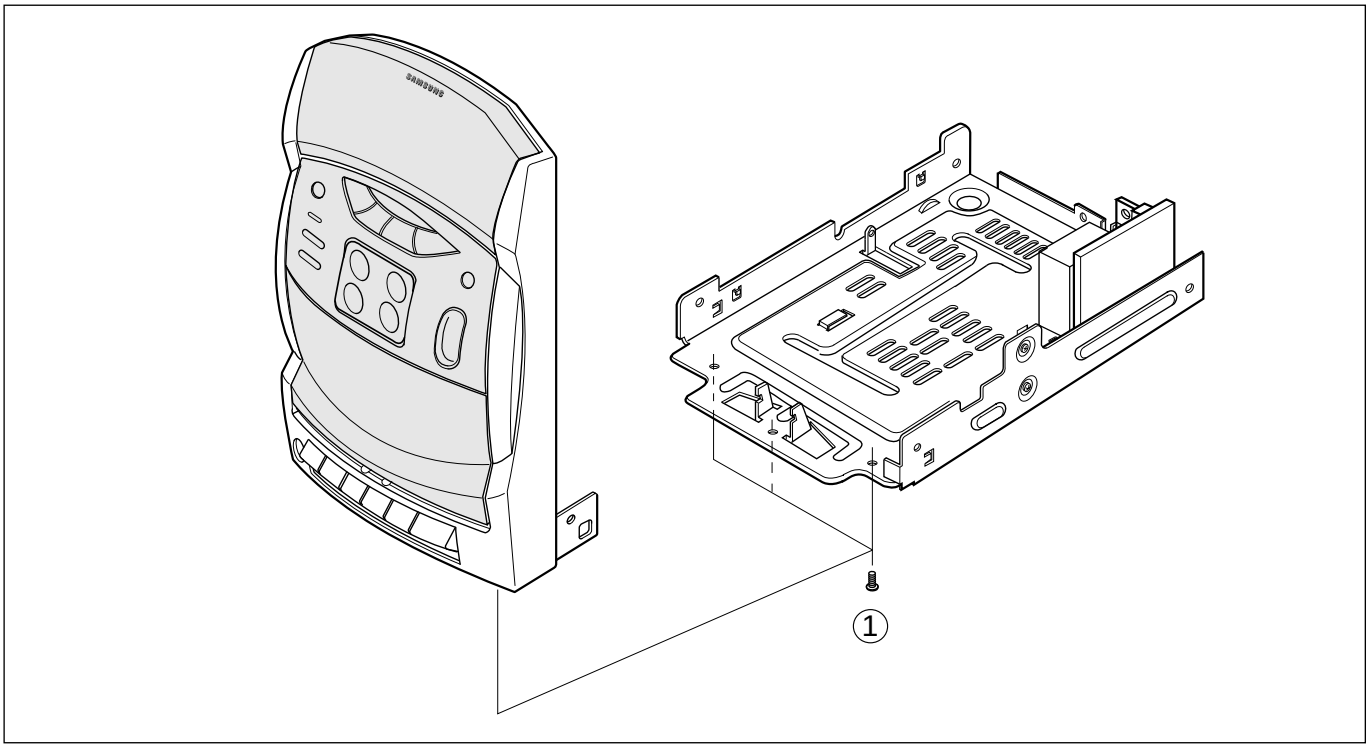


Figure 3-3

3-4 CD-Pack

1. Undo 4 screws of ① and then remove the CD-Pack downward.

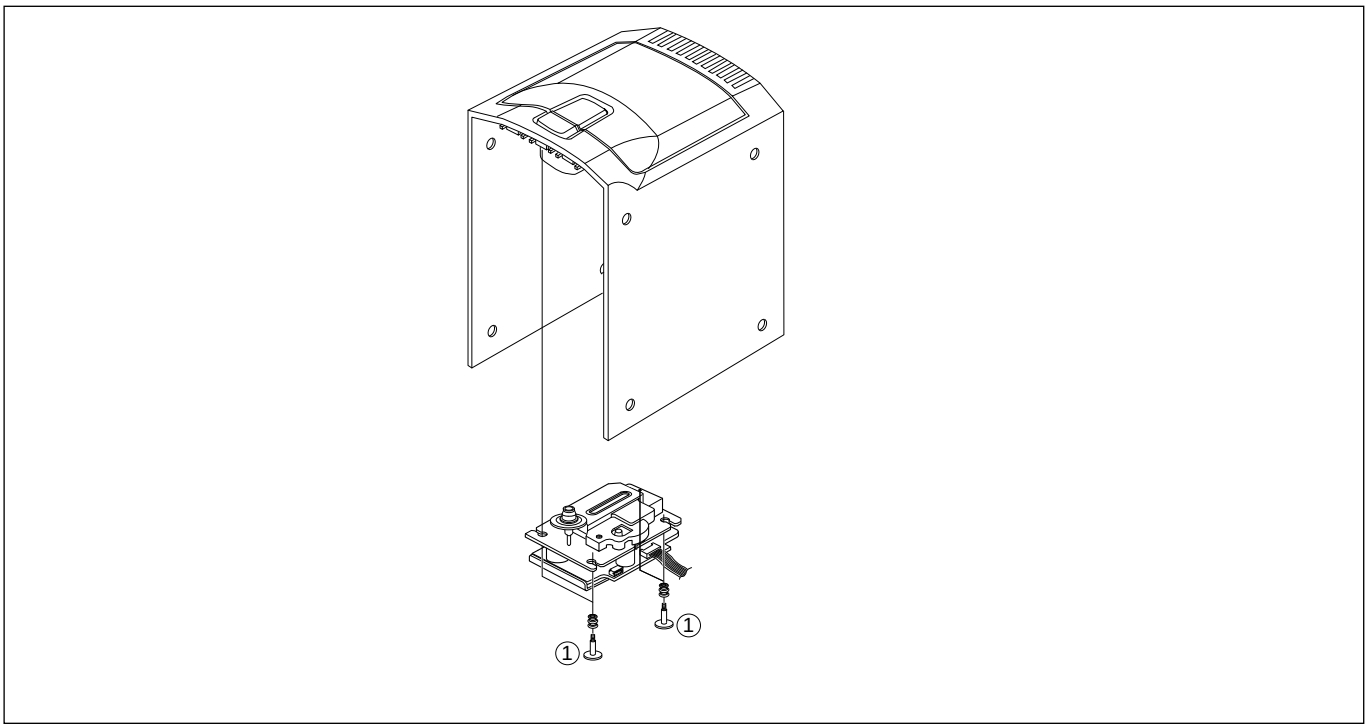


Figure 3-4

3-5 CD Deck

1. Remove the Shaft ① .
2. Lift the P/U ② .
   Note : Take extreme care not to touch the surface of lens.
3. Lift the Center-knob ③.
4. Remove the Center-ring ④ .
5. Remove the Spring-T/Table ⑤ .
6. Remove the Turn-Table (M) ⑥ .
7. Remove 2 screw ⑦ and then remove the Spindle-Motor ⑧ .
8. Remove the Cover-Gear ⑨ by pushing the hook.
9. Remove the Gear(c) ⑩ by pushing the hook.
10. Lift the Gear(b) ⑪ .
11. Remove the Gear(a) ⑫ .
12. Remove 2 screws ⑬ and then remove the Feed-Motor ⑭ .
13. Remove the Chassis-Deck(M) ⑮.

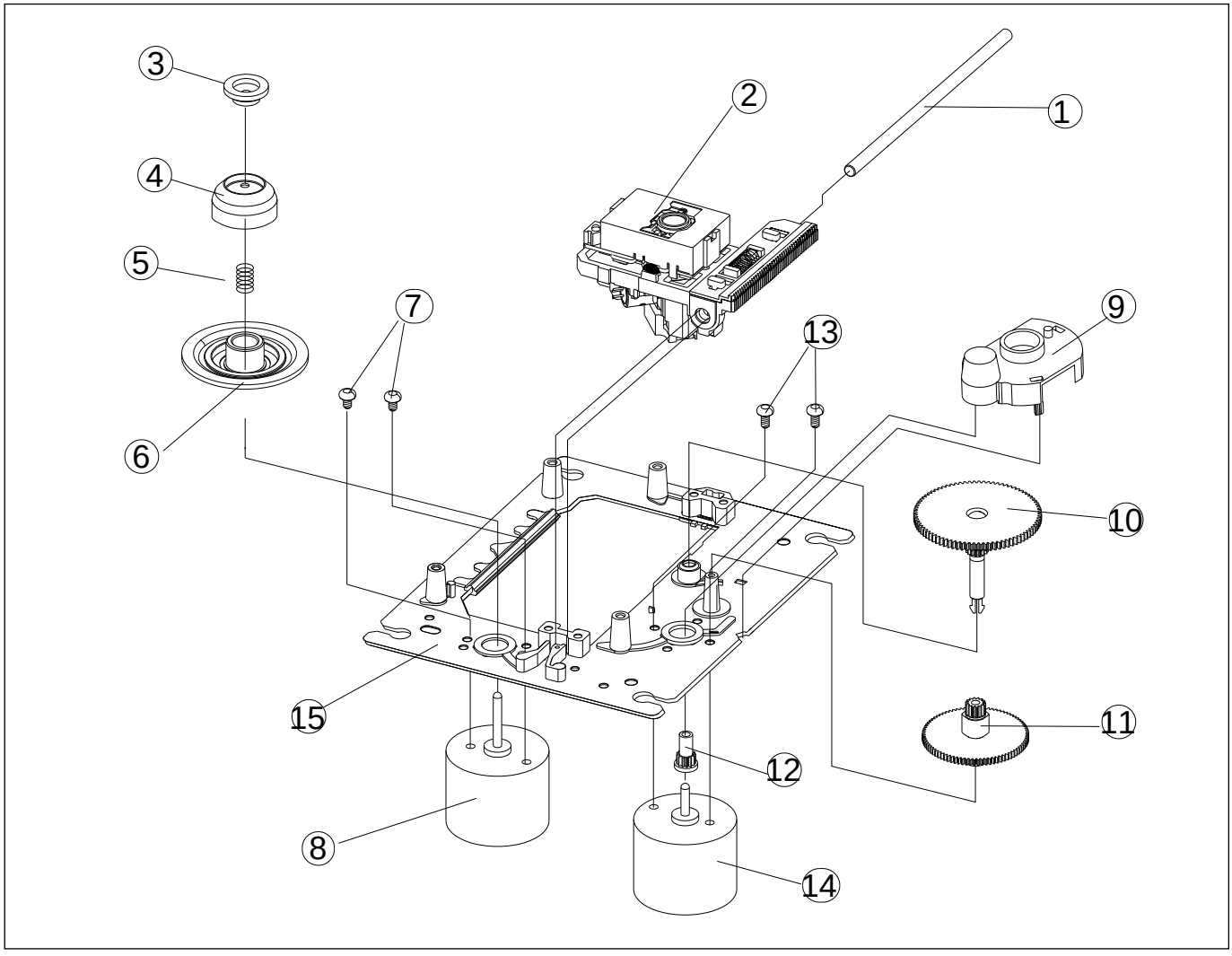


Figure 3-5

FM T.H.D Adjustment	
SSG FREQ.	98MHz
Adjustment point (IT1)	FM DETECTOR COIL
Minumum output(Figure 4-1)	

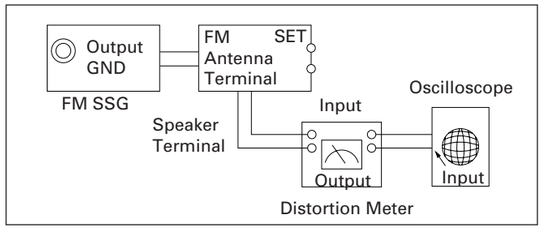


Figure 4-1 IF CENTER and T.H.D Adjustment

FM Search Level Adjustment	
SSG FREQ.	98MHz
Adjustment point (ISVR1)	SEMI-VR(50KB)
"TUNED" is shown on LCD(Figure 4-2)	

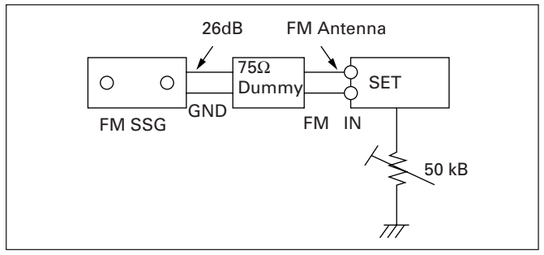


Figure 4-2 FM Auto Search Level Adjustment

FM Stereo Adjustment	
SSG FREQ.	98MHz
Adjustment point (ISVR2)	SEMI-VR(5KB)
L-CH/R-CH : Maximum(Figure 4-3)	

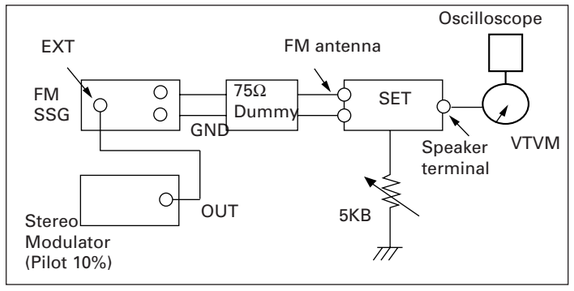


Figure 4-3 FM Stereo Separation Adjustment

4-1-1 Test Equipment

1. AM Standard Signal Generator (S.S.G) : 400Hz, 30% MOD
2. Oscilloscope
3. VTVM
4. Frequency counter
5. Loop antenna
6. Dummy load (4Ω)
7. DC voltmeter

4-1-2 Pre-Adjustment

1. Check the source voltage.
2. Set function and band switches to the band to be aligned.
3. Set the equalizer, volume and balance controls to mid position.

4-1-3 AM Adjustment

Step	Item	Connection	SSG.FREQ.	FREQ. Setting	Adjust. Point	Remark
1	Intermediate frequency (IF) adjustment	Figure 4-5	522 KHZ	522 KHZ	IT 2	Maximum output
2	AM frequency coverage adjustment	Figure 4-4 Connect DC voltmeter to TCON1 and GND(TP1)	–	522 KHZ	OT 1	0.9V
3			–	1611 KHZ	OCT 2	9V
4	Repeat step 2 and 3 serveral times					
5	AM tracking adjustment	Figure 4-5	594 KHZ	594 KHZ	OL 1	Maximum output
6		–	1404 KHZ	1404 KHZ	OCT 1	Maximum output
7	Repeat step 5 and 6 several times					

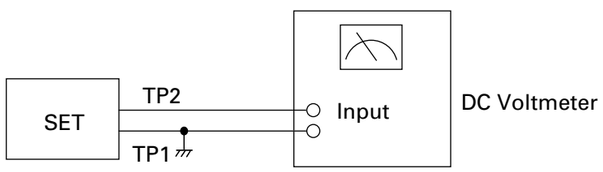


Figure 4-4 AM Frequecny Coverage Adjustment

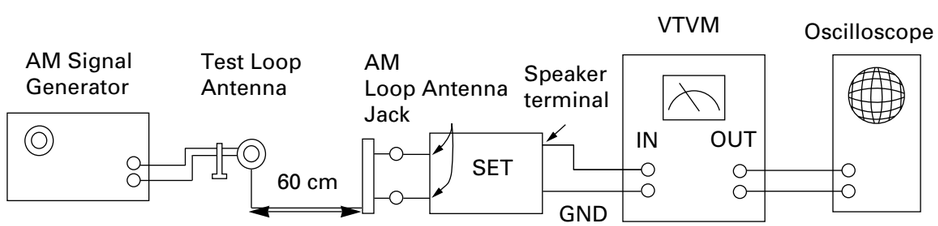


Figure 4-5 AM Tracking Adjustment

4-2 Cassette Deck

4-2-1 Additional Test Equipment : Testing Tape

1. MTT-111 (or equivalent) : Test tape on which 3 KHz signal is recorded (Tape speed adjustment).
2. MTT-113CN (or equivalent) : Test tape on which 8KHz signal is recorded (Azimuth adjustment).

Item	Connection	Preparation	Adjustment point	Remark
Tape speed	Figure 4-6	Insert MTT-111 to Deck . Press PLAY button.	SVR Inside motor	3 KHz
AZIMUTH (DECK) adjustment	Figure 4-8	Insert MTT-113CN to Deck . Press PLAY button.	Figure 4-7	Maximum output and identical phase of L,R channel. Set the screw after adjustment.

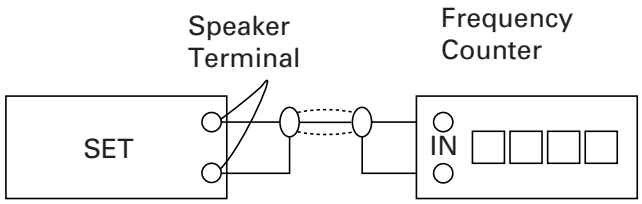


Figure 4-6

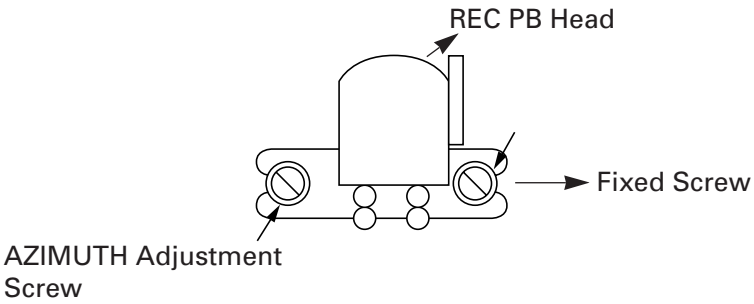


Figure 4-7

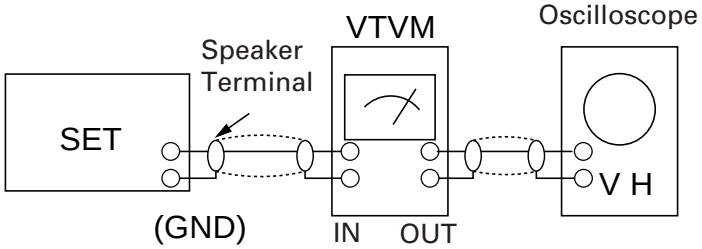
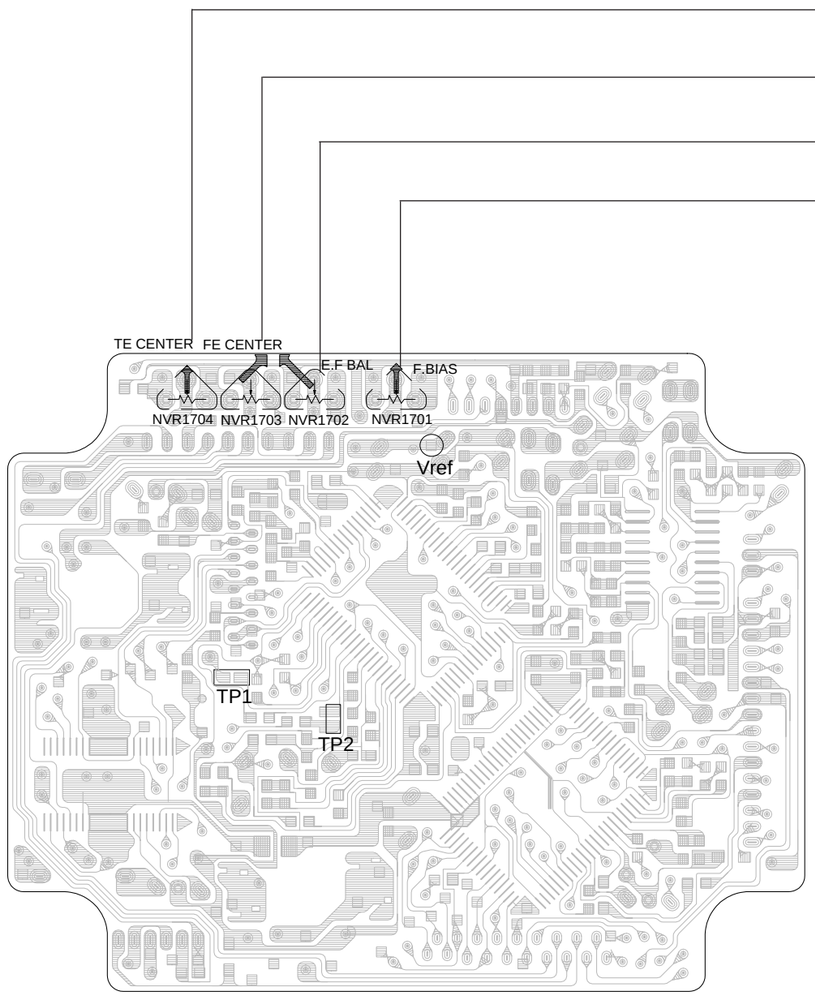


Figure 4-8

4-2-2 Recording Bias Adjustment

1. Connect frequency counter KC434 and press the REC button.
2. Adjust KT431(Bias OSC Coil) until frequency counter reads 85¡ 0.2KHz.

4-3 CD



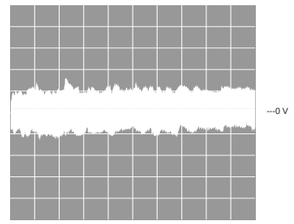
4-3-1 To Adjust FOCUS BIAS(STOP mode)

1. Set Volt/Div of the oscilloscope to DC 100mV.
2. Ground the scope input and set the waveform to 0V, DC range.
3. Connect the GND terminal of the oscilloscope to Vref, and (+) terminal to center of TP1.
4. Set NVR1701 to 0mV.

4-3-2 To Adjust Tracking Gain (PLAY mode)

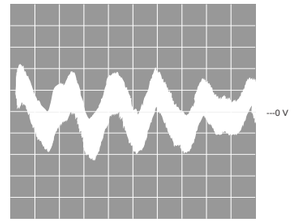
1. Connect the GND terminal of the oscilloscope to Vref and (+) terminal to TP2.
2. Load and play the disc
3. While the disc is running adjust the gain with NVR1704 as shown below.

Normal frequency



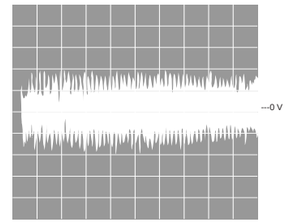
VOLT/DIV : 0.2V
TIME/DIV : 2mS

Low frequency



VOLT/DIV : 0.2V
TIME/DIV : 2mS

High frequency

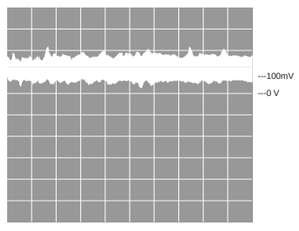


VOLT/DIV : 0.2V
TIME/DIV : 2mS

4-3-3 To Adjust Focus Gain (PLAY mode)

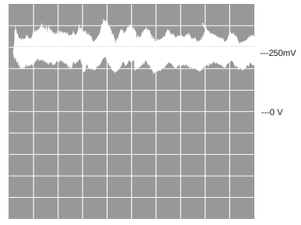
1. Connect the GND terminal of the oscilloscope to Vref and (+) terminal to TP1.
2. Load and play the disc
3. While the disc is running adjust the gain with NVR1703 as shown in the following figure.

Normal frequency



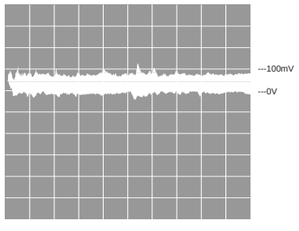
VOLT/DIV : 0.1V
TIME/DIV : 2mS

Low frequency



VOLT/DIV : 0.1V
TIME/DIV : 2mS

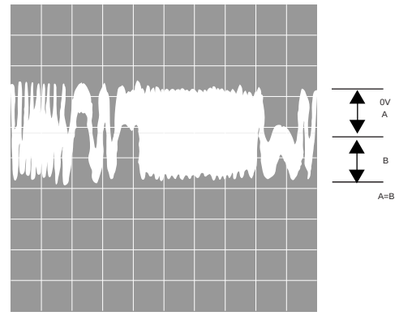
High frequency



VOLT/DIV : 0.1V
TIME/DIV : 2mS

4-3-4 To Adjust E/F Balance (PLAY mode)

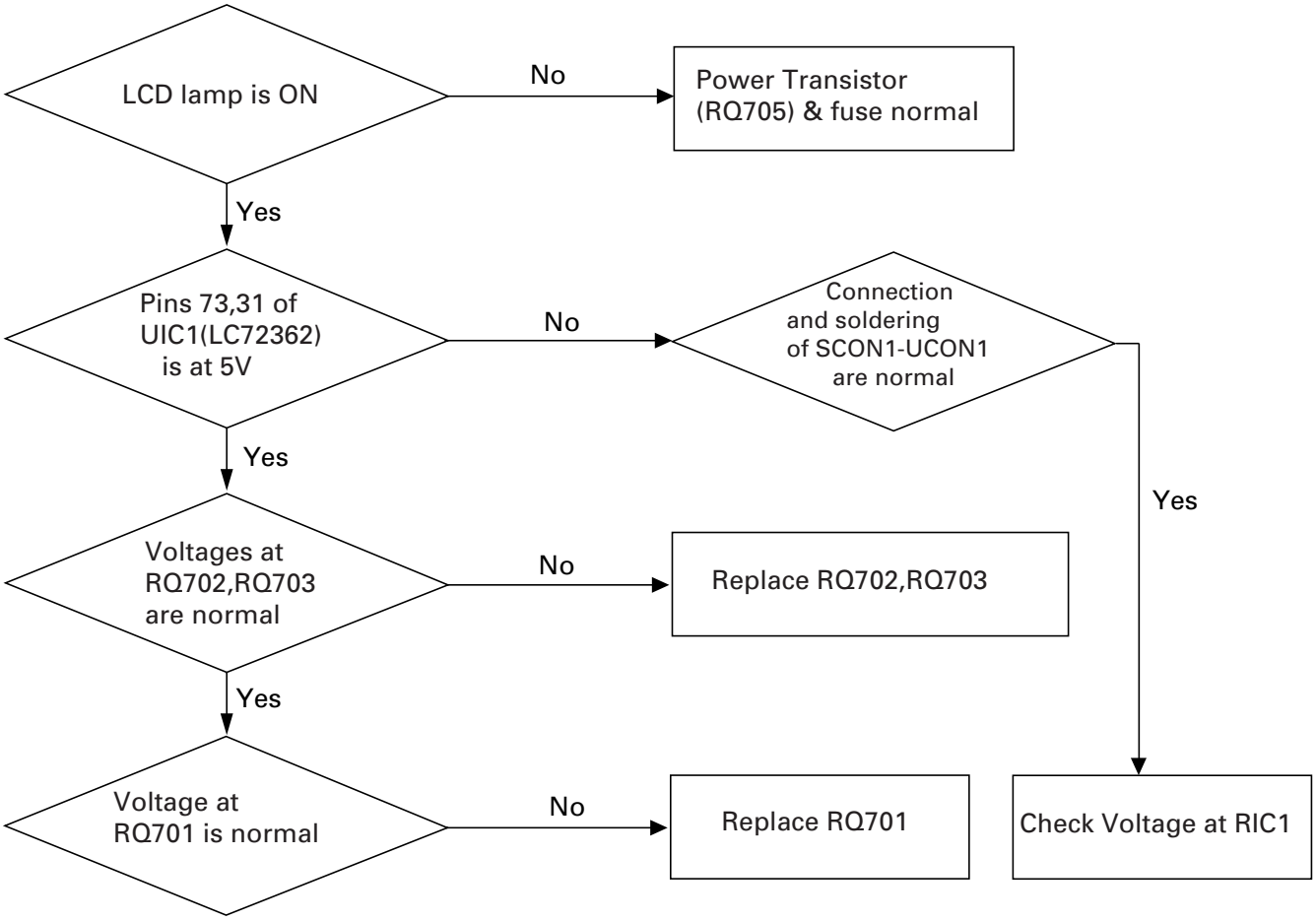
1. Set TIME/DIV of the oscilloscope to 2mS.
2. Set Volt/DIV of the oscilloscope to 0.5V.
3. Ground the scope input and set to DC and then set the DC range.
4. Connect the GND terminal of the oscilloscope to Vref and (+) terminal to center to TP2.
5. Load and play the disc.
6. Turn NVR1704 counterclockwise to the minimum value.
7. Raise NVR1702 and adjust the waveform so that its middle comes to GND of the oscilloscope (or until the upper half of waveform becomes symmetrical to the bottom half, A=B)
8. Adjust NVR1704 (arrow) for normal sound.



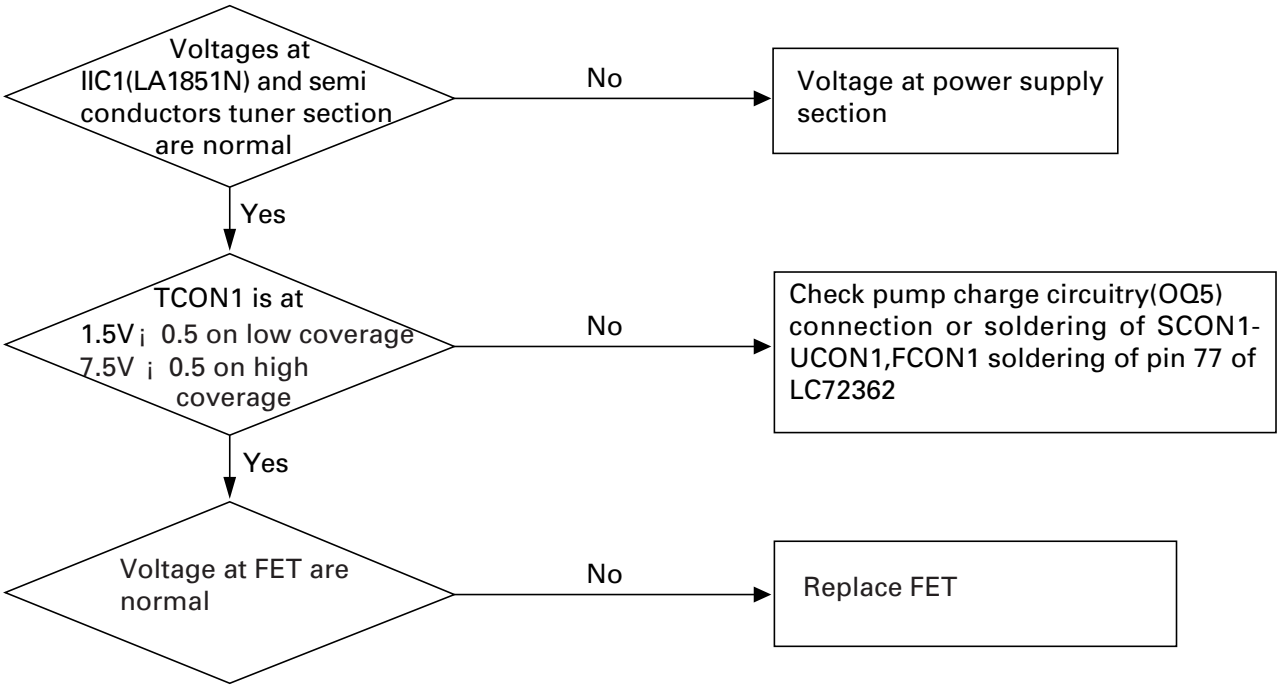
6. Troubleshooting

6-1 Main

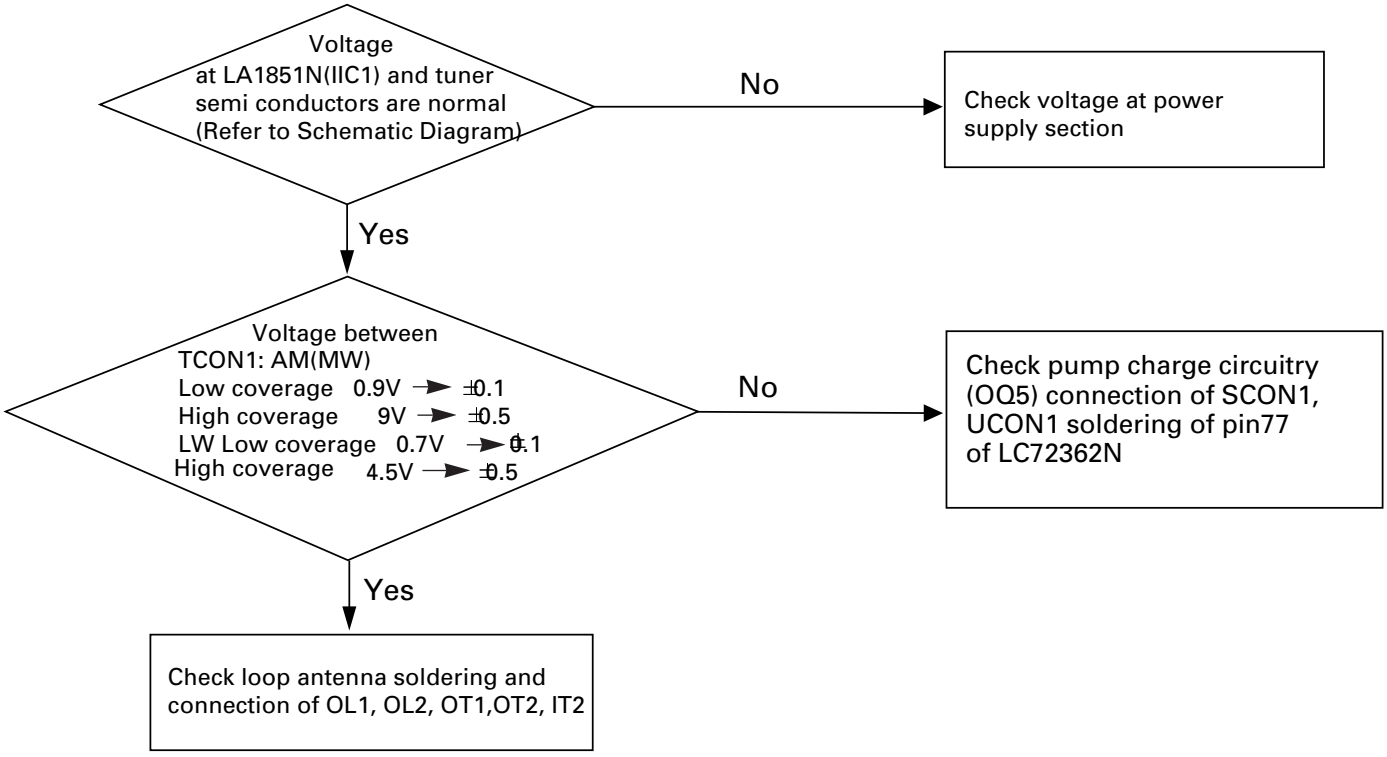
6-1-1 Power Malfunction



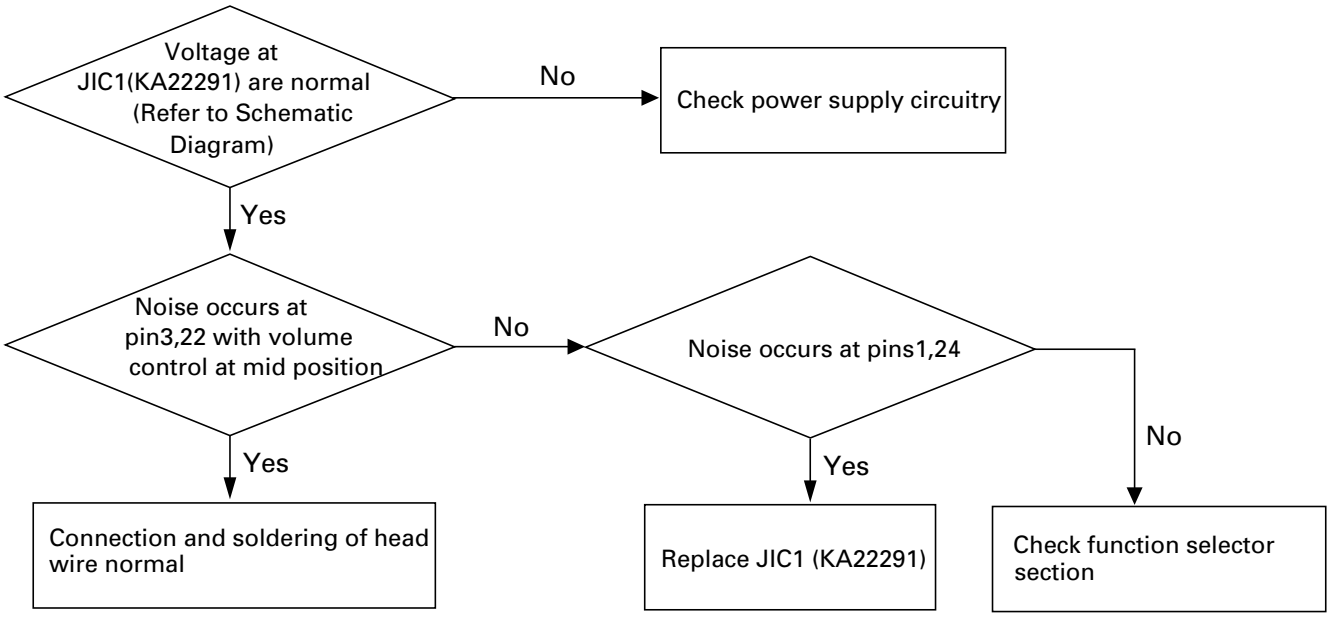
6-1-2 FM No Sound


Voltages at IIC1(LA1851N) and semi conductors tuner section are normal
No
Voltage at power supply section
Yes
TCON1 is at 1.5V ¡ 0.5 on low coverage 7.5V ¡ 0.5 on high coverage
No
Check pump charge circuitry(OQ5) connection or soldering of SCON1-UCON1,FCON1 soldering of pin 77 of LC72362
Yes
Voltage at FET are normal
No
Replace FET

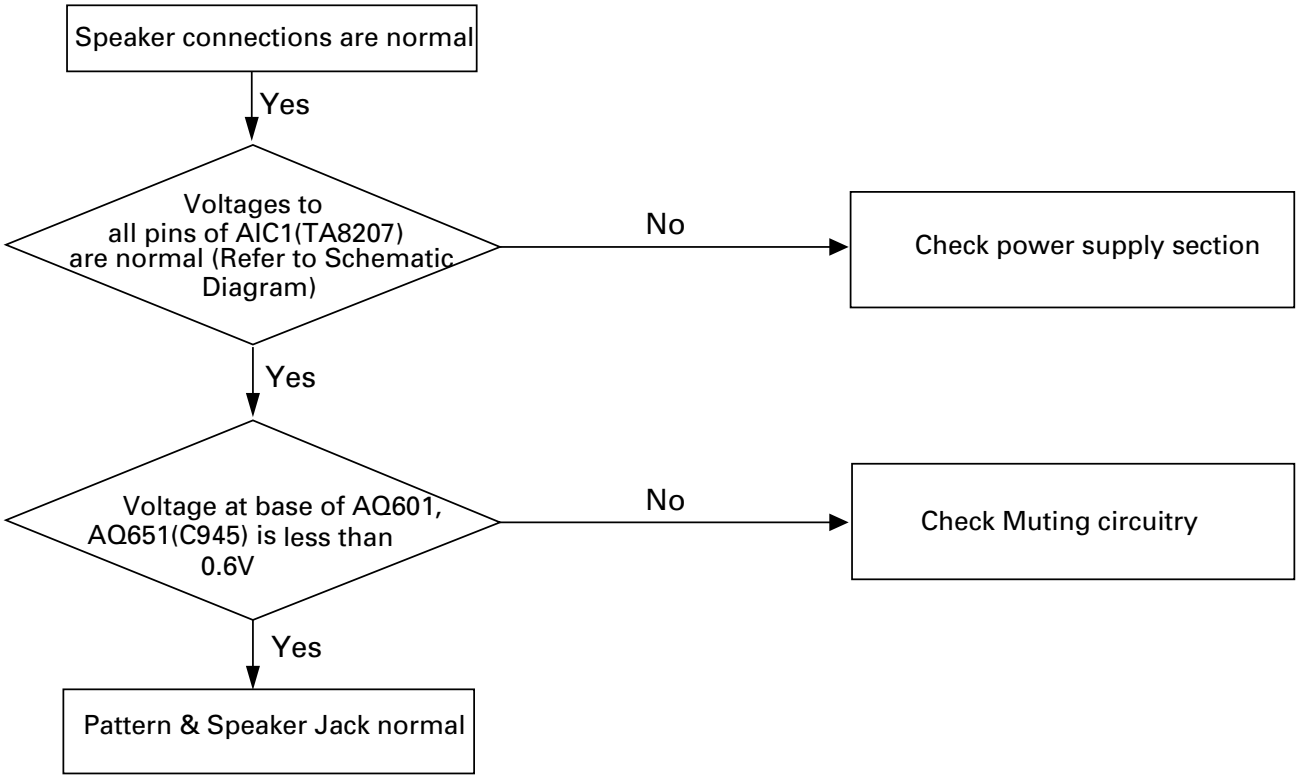
6-1-3 AM No Sound


Voltage at LA1851N(IIC1) and tuner semi conductors are normal (Refer to Schematic Diagram)
No
Check voltage at power supply section
Yes
Voltage between TCON1: AM(MW)
Low coverage 0.9V → ±0.1
High coverage 9V → ±0.5
LW Low coverage 0.7V → ±0.1
High coverage 4.5V → ±0.5
No
Check pump charge circuitry (OQ5) connection of SCON1, UCON1 soldering of pin77 of LC72362N
Yes
Check loop antenna soldering and connection of OL1, OL2, OT1,OT2, IT2

6-1-4 Tape Not Playing

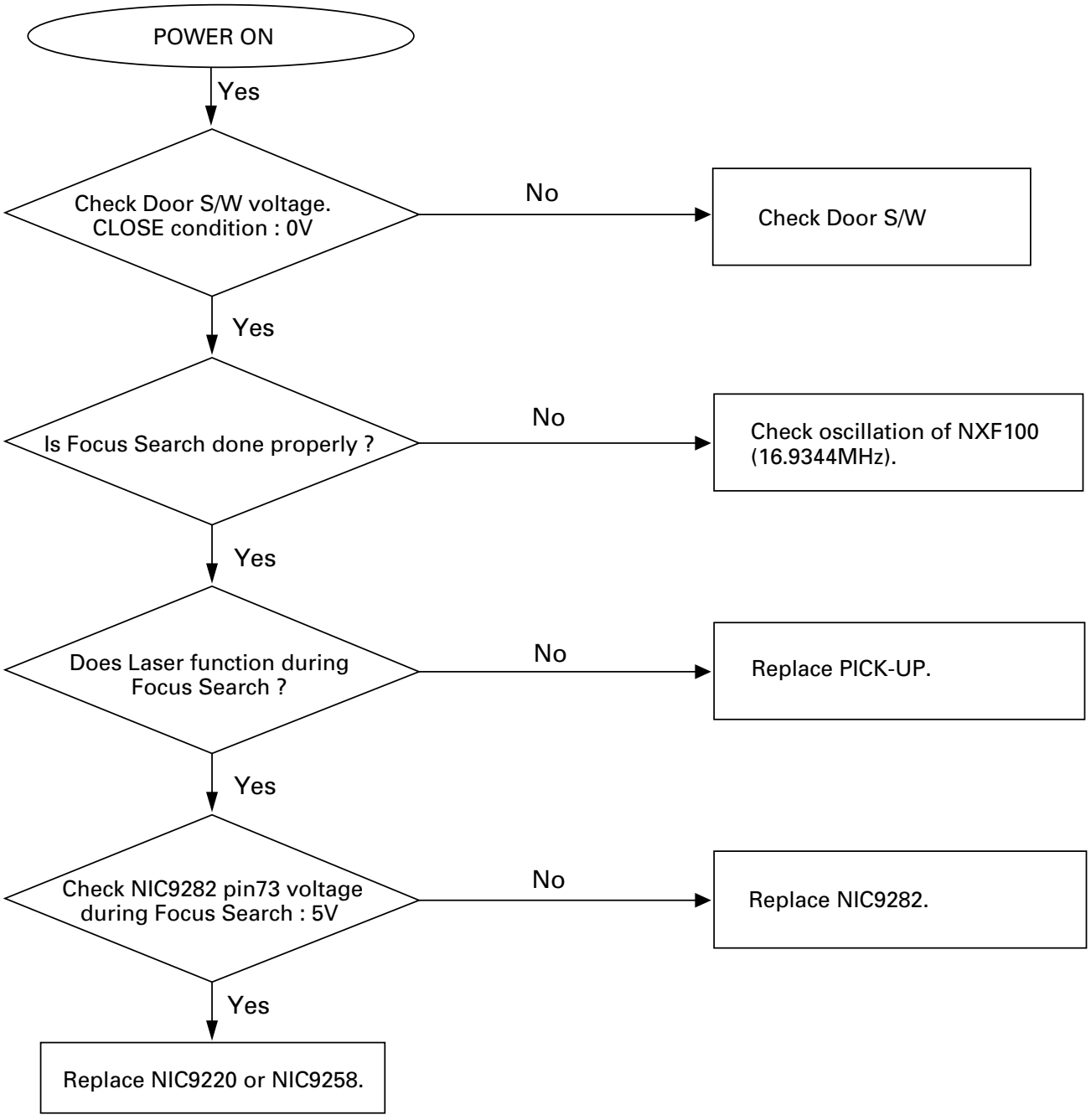


6-1-5 Audio Output Problem

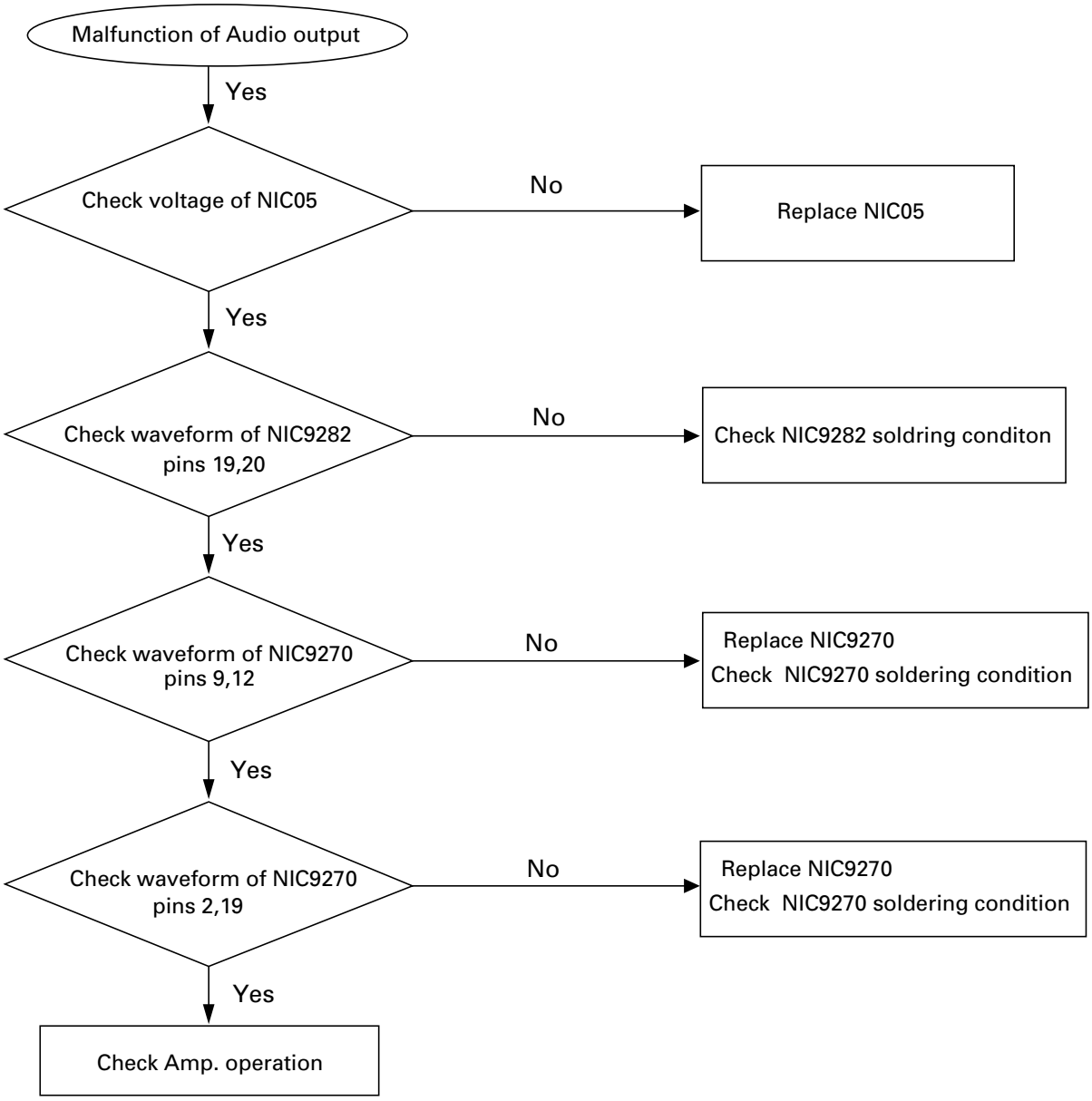


6-2 CD

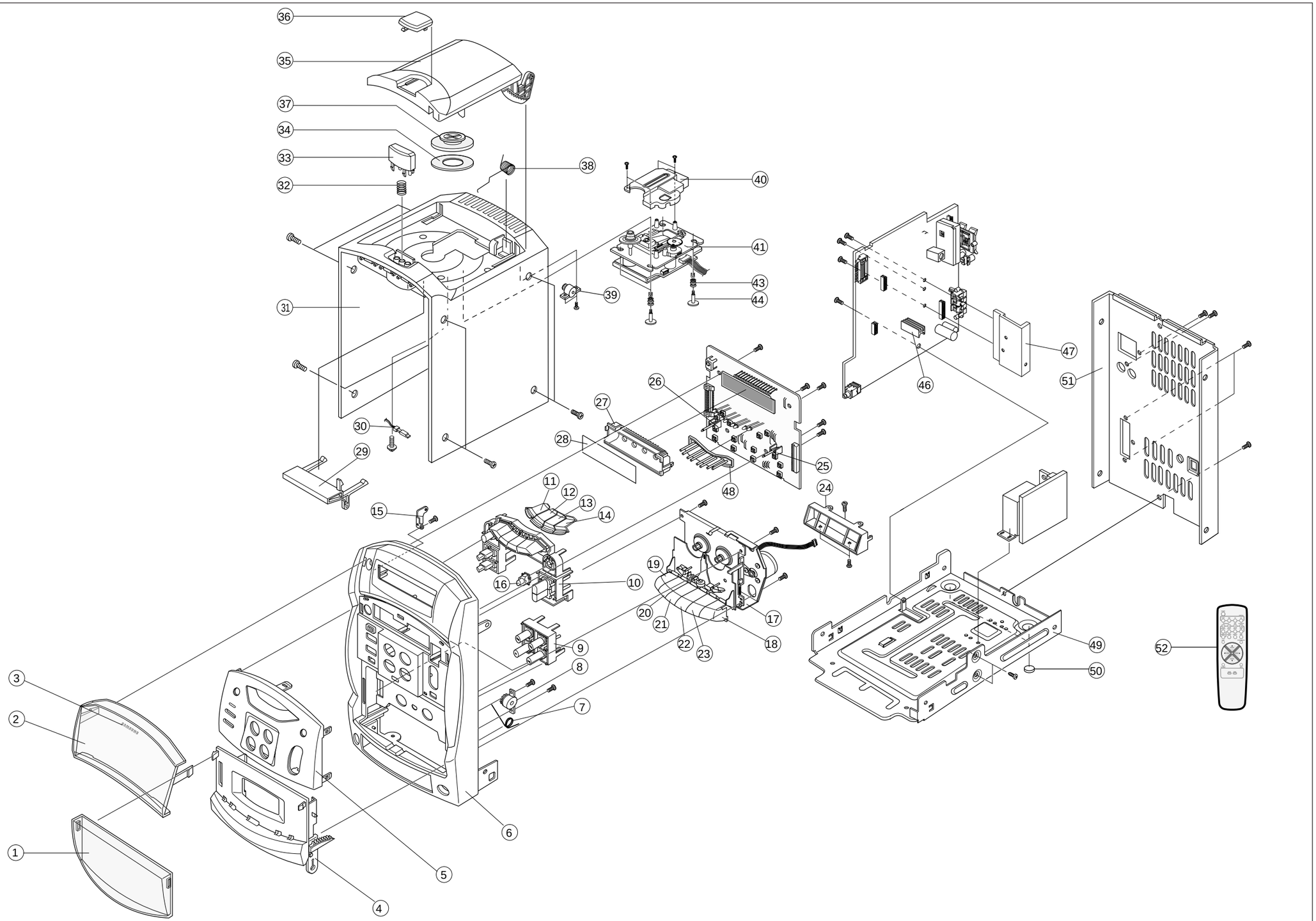
6-2-1 Malfunction of DISC Revolution



6-2-2 Malfunction of Audio output

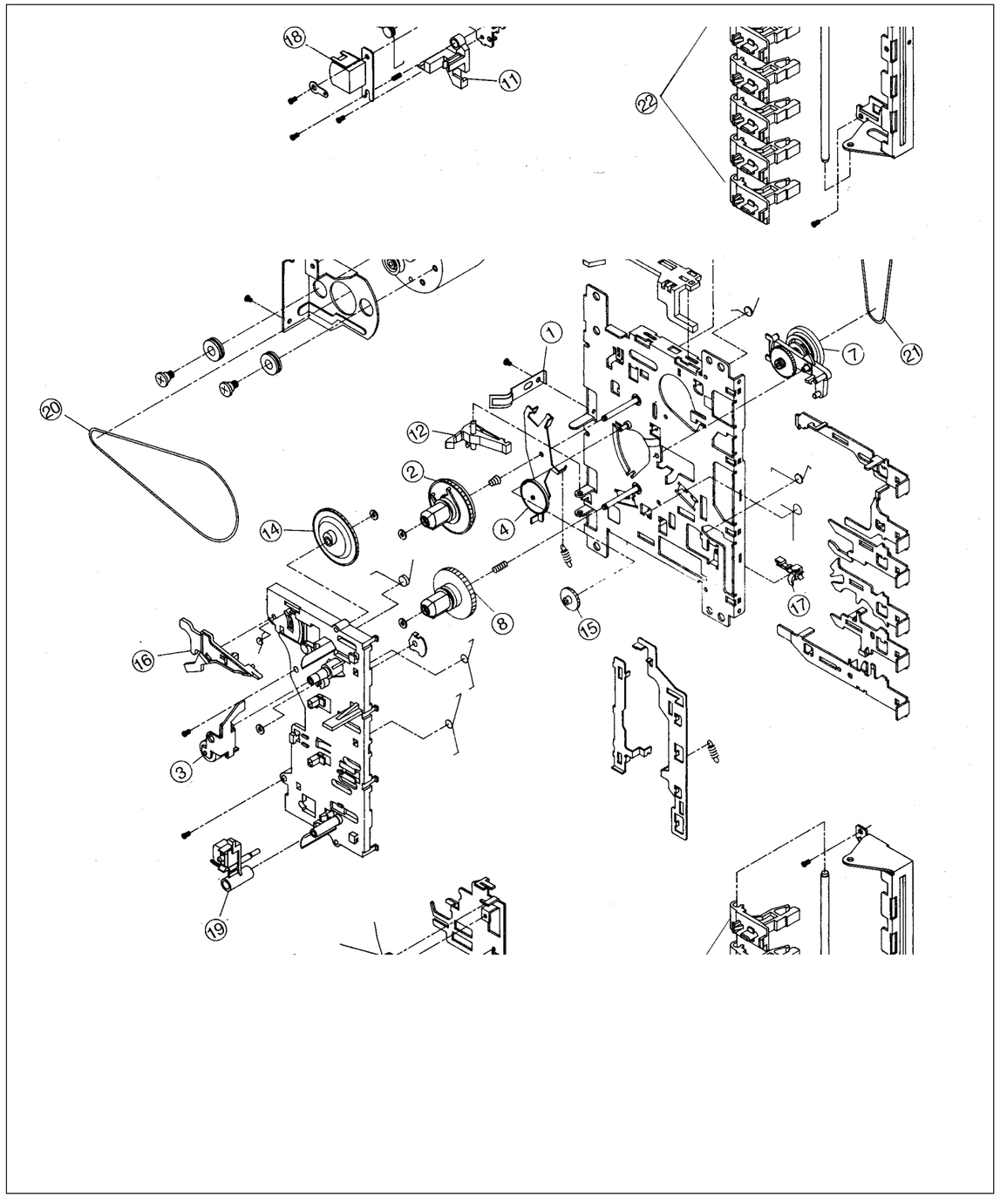


7-2 Main Exploded View and Parts List



7. Exploded Views and Parts List

7-1 Cassette View and Parts List

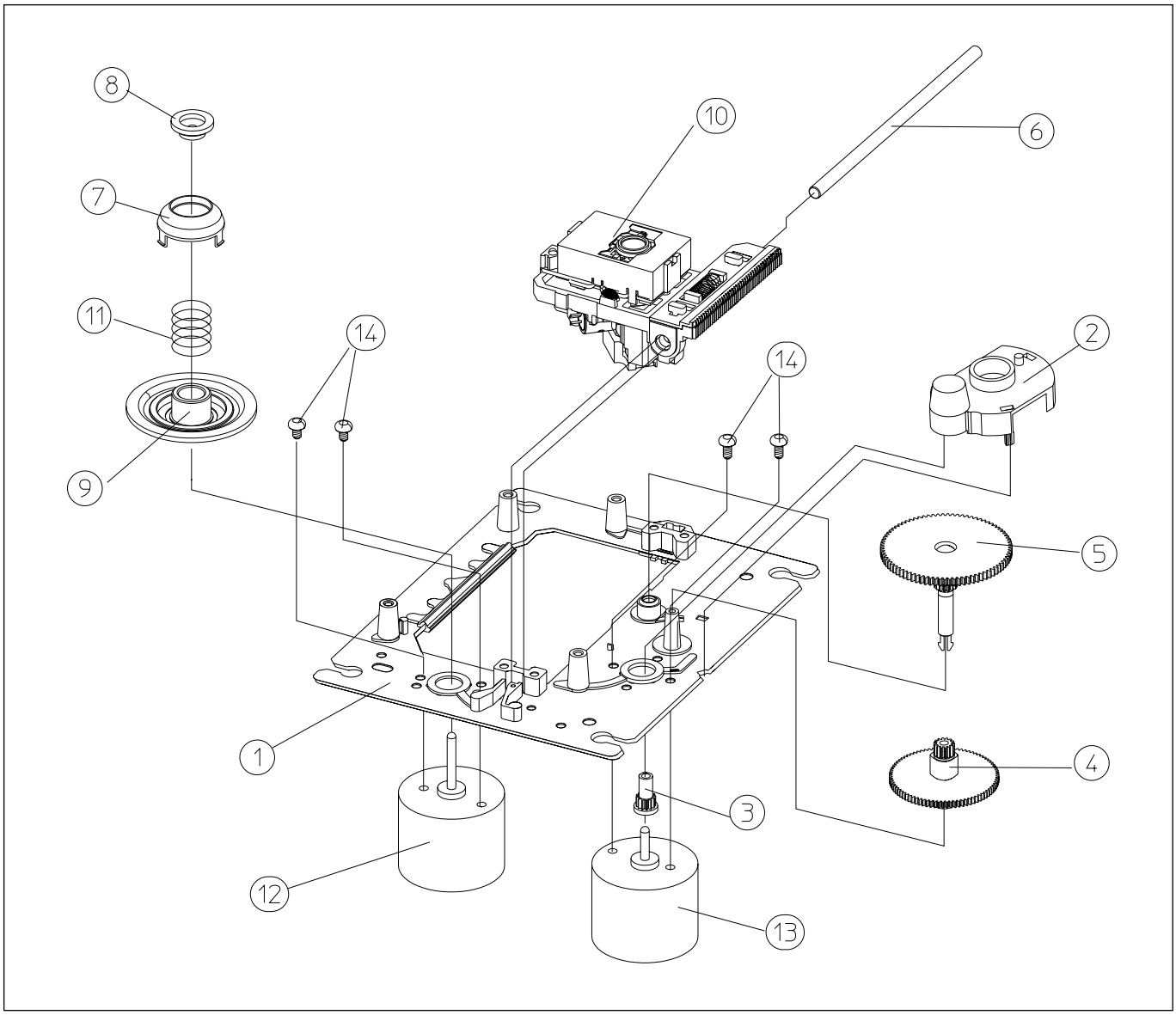


No.	New Part No.	Description	Specification	Old Part No.
	AH59-20003T	DECK-CASSETTE	ADR2083FRU	17159-0078-00
1	AH81-10026C	PACK-SPRING	51299-02506XC	10000-607-146
2	AH81-10025B	TAKE UP REEL ASS'Y	ADR28-010	10000-607-101
3	AH81-10025D	PINCH ARM ASS'Y	ADR26-001	10000-607-103
4	AH81-10025E	IDLER ARM ASS'Y	ADR02-042	10000-607-104
5	AH81-10025F	FLYWHEEL GEAR S ASS'Y	ADR15-021	10000-607-105
6	AH81-10688A	MOTOR	EG530AD 2B	
7	AH81-10025J	F.R ARM ASS'Y	ADR22-012	10000-607-108
8	AH81-10025K	SUPPLY REEL GEAR ASS'Y	11128-00045AA	10000-607-109
9	AH81-10025S	PAUSE CAP	11116-00011AA	10000-607-116
10	AH81-10025M	PAUSE LOCK CAM	11116-00011AA	10000-607-111
11	AH81-10025P	HEAD BASE M	11105-00031AA	10000-607-113
12	AH81-10026B	REC SAFETY LEVER	11134-01000AA	10000-607-145
13	AH81-10026M	EJECT LEVER F	11134-01220AA	10000-607-160
14	AH81-10026Q	CAM GEAR	11128-00393AA	10000-607-114
15	AH81-10025R	F.F GEAR	11128-00055AA	10000-607-115
16	AH81-10025T	SENSOR ARM	11102-00530AA	10000-607-117
17	AH81-10026T	LEAF SW(MAIN)	MSW1541 X ACV	10000-607-178
18	AH81-10022E	R/P HEAD	MS15RA-A2N1	10000-523-008
19	AH81-10022T	E-HEAD	PHK380-MS16A	10000-542-002
20	AH81-10026V	BELT(MAIN)	Ø45.5 X T1.0	10000-607-180
21	AH81-10026H	BELT(SUB)	Ø34.7PI X T1.0	10000-607-156
22	AH81-10025U	BUTTON KNOB	11133-00010AA	10000-607-128

7-3 CD DECK ASS'Y Parts List

No.	New Code No.	Description	Specification	Old Code No.
	CMSP30AM6	DECK -CD	BASIC	
1	AH61-10022B	CHASSIS-DECK(M)	CMSP30 POM M90-44	12001-0052-02
2	AH63-30048A	COVER-GEAR	CMS-V30 BLK ABS	13313-0057-00
3	AH66-20016A	GEAR(A)	CMS-V30 M0.3 Z13 SP POM	11474-0017-00
4	AH66-20017A	GEAR(B)	CMS-V30 M0.3 Z13 SP POM	11474-0018-00
5	AH66-20018A	GEAR(C)	CMS-V30 M0.3 Z16/Z90 SP POM	11474-0019-00
6	AH71-50036A	SHAFT-PU	CMS-V30 D3 L79 SUS420J2	11404-0041-00
7	15253-503-011	CENTER-RING	ABS+GS 20% CMS-V10N	15253-503-011
8	AH64-10648A	CENTER-KNOB	ABS 94HB	12224-0017-00
9	AH66-90029A	TURN-TABLE(M)	-,-,-, CMS-V30	16034-504-510
10	AJ30-20001B	PICK-UP CDP	P/U SOH-A1 ROW V-P/J	12224-0017-00
11	AH61-60055A	SPRING-T/TABLE	CS STS-W PI0.4 D5.7 L9.3 CMS-V10N	*SOH-AP
12	AH31-10009A	MOTOR-SPINDLE	RF-310T-11400 43L 25V 85mA	16829-0004-00
13	AH31-10002B	MOTOR-FEED	RF-310TA 30MM NDM4RA3ETL 11.0MM	14769-057-250
14	AH60-10014A	SCREW-PH(+M2*3)	+M2X3 FE FZY W700	17008-120-032

7-3-1 CD DECK Exploded View



7-2-1 Main Parts List

No.	New Code No.	Description	Specification	Old Code No.
1	AH64 - 40382B	WINDOW - CASSETTE	-,PMMA,94HB,T2.0,BROWN	
2	AH64 - 40383A	WINDOW-LCD	-,ACRYL,94HB,T2.5,SMOKE	
3	AH64-70031A	BADGE-BRAND	-, AL,-,L28,R200	
4	AH64-50315A	DOOR-CASSETTE	-,ABS,94HB,T3.0,BLK	
5	AH63-30197C	COVER-FRONT	-,ABS,94HB,T2.5,BLK	
6	AH64-30367C	CABINET-FRONT	MIPS,94HB,BLK	
7	AH61-80030A	DAMPER-ASS'Y	-,POM,M0.8,G130,BLK	
8	AH61-60311A	SPRING-CASSETTE	-,TS,SUS304,PI0.9,OD9.8	
9	AH64-11078C	KNOB-CD	-,ABS,94HB,BLK	
10	AH64-11077C	KNOB-FUNCTION	-,ABS,94HB,BLK	
11	AH67-10128B	LENS-FUN, TUNER	-,+,PMMA,T10,0.7X15	
12	AH67-10128C	LENS-FUN,CD	-,+,PMMA,T10,0.7X15	
13	AH67-10128D	LENS-FUN, TAPE	-,+,PMMA,T10,0.7X15	
14	AH67-10128E	LENS-FUN, AUX	-,+,PMMA,T10,0.7X15	
15	AH61-10675A	BRAKET-MOUNT	-,SUS,-,T1.0	
16	AH64-11076A	KNOB-SRS	-,ABS,94HB,TRP	
17	AH59-20003T	DECK-CASSETE	ADR2083FRU,CASSETTE	17159-0081-00
18	AH64-11079A	KNOB-DECK,PAUSE	-,ABS,94HB,BLK	
19	AH64-11080B	KNOB-DECK REC	-,ABS,94HB,BLK	
20	AH64-11080C	KNOB-DECK PLAY	-,ABS,94HB,BLK	
21	AH64-11080D	KNOB-DECK FF	-,ABS,94HB,BLK	
22	AH64-11080F	KNOB-DECK REW	-,ABS,94HB,BLK	
23	AH64-11080G	KNOB-DECK, ST/EJ	-,ABS,94HB,BLK	
24	AH61-20415A	HOLDER-DECK	-,ABS,94HB,BLK	
25	AH61-20394A	HOLDER-LED SRS	-,ABS,94HB,BLK	
26	AH61-20393A	HOLDER-LED POWER	-,ABS,94HB,BLK	
27	AH61-20392A	HOLDER-LCD	-,ABS,94HB,BLK	
28	AH67-40024A	FILTER-LCD	PC,T0.5,WHT	10874-0014-00
29	AH66-30085A	LEVER-EJECT	-,PMMA,T2.5,L50	
30	3409-000107	LEAF-SW	16V,30MA,10GE	
31	AH64-30373A	CABINET-TOP	-,MIPS,94HB,T3.0	
32	AH61-60313A	SPRING-EJECT	-,CS,SUS,PI0.7,OD9.4	
33	AH64-11100A	KNOB-CD EJECT	-,ABS,94HB,BLK	
34	AH63-70025B	SHEET-CHUCK	T0.3,L50,W68,BLK	
35	AH64-50317C	DOOR-CD	-,AS, 94HB,BLK	
36	AH64-40385B	WINDOW-CD DOOR	-,ACRYL,94HB,T2.5	
37	16603-511-840	CHUCK-PLATE	ABS,BLK	10214-0045-02
38	AH61-60312A	SPRING-CD DOOR	-,ES,SUS,PI1.2,OD1.2	
39	AH61-80030A	DAMPER-ASS'Y	-,POM,M0.8,G130	
40	AH61-20258C	CAP-PICK UP	ABS,-,BLK	16033-507-012
41	G3A8-1/16/C	ASS'T CD-DECK	G3A8-CD	
43	AH73-10012A	RUBBER-CD	SI RUBBER,-	16174-503-411
44	AH61-50182B	SHIFT-CD	FE,FZY,D2.6,L10.5	
46	AH62-30061A	HEAT-SINK	AL,EXTR,WHT	
47	AH62-30107A	HEAT-SINK	-,AL,-,T6.0,WHT	
48	AH61-20395A	HOLDER-LED FUNCTION	ABS BLK	
49	AH64-30368A	CABINT-BOTTOM	-,SECC,-,T1.0,L154	
50	AH73-10009A	RUBBER-FOOT	URETAN,T1.5,PI8	
51	AH64-30369C	CABINET-REAR	-,SECC,-,T0.8,L156	
52	AH59-10085A	REMOCON-ASS'Y	LC72362	
53	AH68-50262B	LABEL-REFLECT	-,T/PAPER,T0.07,L20,W10	

8. Electrical Parts List

Loc No.	New Part No.	Description	Specification	Old Part No.
AH90-10651A		**ASSY-PCB FRONT;MM16,EXP**		
AH90-30494A		**ASSY-COM PCB FRONT;MM16,EXP**		
UD2,3,4,5,6,TOP, NARROW,AUX	0401-000101	DIODE-SWITCHING;1N4148,100V,200MA,5		
UD1	0402-000127	DIODE-RECTIFIER;1N4002,100V,1A,DO-4		A4104-0053
UQ8	0501-000294	TR-SMALL SIGNAL;-,PNP,800MW,TO-92,T		12149-101-560
UQ6	0501-000303	TR-SMALL SIGNAL;-,PNP,250MW,TO-92,-		12149-101-520
UQ1,2,3,4,5,7	0501-000398	TR-SMALL SIGNAL;-,NPN,250MW,TO-92,T		12149-301-900
ULED1,2,3,4,5,6,7,8,9	0601-000148	LED;ROUND,GRN,3.1MM,615NM		12309-110-210
ULED10	0601-000246	LED;ROUND,RED,3.1MM,700NM		12309-115-330
UIC2	1003-001029	IC-LCD DRIVER;LC75823E,QFP,64P,17.2		
UR47	2001-000241	R-CARBON;1.5KOHM,5%,1/8W,AA,TP,1.8X		11018-877-152
UR44	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X		111018-877-104
UR39	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3		11018-877-101
UR27	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-10
UR23,28	2001-000331	R-CARBON;12KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-123
UR22,30	2001-000411	R-CARBON;18KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-183
UR8,9,10,11,12,32,33	2001-000449	R-CARBON;2.2KOHM,5%,1/8W,AA,TP,1.8X		11018-877-222
UR46	2001-000515	R-CARBON;220OHM,5%,1/8W,AA,TP,1.8X3		11018-877-221
UR17,26,29,36,37,38	2001-000522	R-CARBON;22KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-223
UR24	2001-000563	R-CARBON;27KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-273
UR40	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X		11018-877-332
UR41	2001-000613	R-CARBON;3.9KOHM,5%,1/8W,AA,TP,1.8X		11018-877-392
UR6,7,19,21	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,1.8X		11018-877-472
UR16,18,20,25,34,35,42,43	2001-000786	R-CARBON;47KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-473
UR1,2,3,4,5	2001-000855	R-CARBON;560OHM,5%,1/4W,AA,TP,2.4X6		11018-257-561
UR31	2001-000977	R-CARBON;8.2KOHM,5%,1/8W,AA,TP,1.8X		11018-877-822
UC1,2	2201-000273	C-CERAMIC,DISC;18PF,5%,50V,NPO,5.0*		11407-057-180
UC5	2201-000300	C-CERAMIC,DISC;1NF,20%,50V,Y5T,4X4M		11417-329-102
RC1	2201-000520	C-CERAMIC,DISC;4.7NF,+80-20%,400VAC		11469-501-070
UC6	2201-000565	C-CERAMIC,DISC;47NF,20%,50V,Y5V,12.		11417-344-473
UC9	2202-000796	C-CERAMIC,MLC-AXIAL;1NF,10%,50V,Y5P		11449-518-102
UC7,11	2202-000854	C-CERAMIC,MLC-AXIAL;47NF,0.3,50V,Y5		
UC3	2401-000778	C-AL;220UF,20%,10V,GP,6.3X11,2.5MM,		11608-102-224
UC10	2401-000907	C-AL;22UF,20%,16V,GP,5*11,2MM,		11608-103-223
UC4	2401-001968	C-AL;470NF,20%,50V,GP,5X11MM,2MM,BK		
UC8	2409-000123	C-EDL;47000UF,4UA,5.5V,-,-,5MM,BK		B1104-0540
UX1	2801-001398	CRYSTAL-UNIT;4.5MHZ,50PPM,28-AAM,12		14539-003-010
USW1,2,3,4,5,6,7,8,9,10,11 USW12,13,14	3404-000165	SWITCH-TACT;12V,50MA,160GF+-50GF,6X		13559-901-100
UCON2	3708-000451	CONNECTOR-FPC/FC/PIC;16P,1.25MM,STR		B6010-1549
UCON1	3710-001036	CONNECTOR-SOCKET;28P,1R,1.25MM,STRA		
RJ1	3711-000190	CONNECTOR-HEADER;1WALL,2P,1R,7.92MM		13349-156-020
RCON1	3711-000898	CONNECTOR-HEADER;BOX,3P,1R,2.5MM,AN		13349-102-030
LAMP1,2,3,4	4713-000158	LAMP-NEON;9V,75MA,0.7W,TRP,3X5.3MM,		B4158-0043
ULCD1	AH07-10035C	LCD-PANNEL;-,LE-0727AP,SCM6700,-		
UIC1	AH09-10060Y	IC-MCU;LC72362N-9257,80P,QFP,-		

Loc No.	New Part No.	Description	Specification	Old Part No.
RT701	AH26-80140H	TRANS-POWER;EI60X30,115/230V,60/50H		
RL101,102	AH27-10001F	COIL-CHOKE;27UH,K,Q30,-,-,DR(6.5*7.		12429-010-330
UFCW2	AH39-30010A	CABLE-IF;-,5264/51088-02,300MM,1365		
F/PCB	AH41-10415A	PCB-FRONT;MM16,1L,FR-1,247X163X1.6T		
RMC-EYE	AH59-60001H	MODULE-REMOCON;RPM-638CBR-L,38KHZ,-		B1294-0042
	AH61-20392A	HOLDER-LCD;-,ABS,94HB,BLK,-,MM16		
	AH61-20393A	HOLDER-LED,POWER;-,ABS,94HB,BLK,-,M		
	AH61-20394A	HOLDER-LED,SRS;-,ABS,94HB,BLK,-,MM1		
	AH61-20395A	HOLDER-LED,FUNC;-,ABS,94HB,BLK,-,MM		
	AH67-40024A	FILTER-LCD;PC,T0.5,-,-,-,-,WHT,SCM6		10874-0014-00
UCAP1,2,3,4	AH73-10007A	RUBBER-CAP;SILICON,-,RCD-1650,GRN		

AH90-40390A ASSY-OPT PCB FRONT;MM16,VDE

FUSE702	3601-000220	FUSE-FERRULE;250V,200MA,TIME LAG,GL	14709-241-090
RF702	3602-000147	FUSE-CLIP;250V,7.5A,30MOHM	13164-101-913

AH90-10654A ASSY-PCB MAIN;MM16LE,5W
AH90-30492A ASSY-COM PCB MAIN;MM16LE,5W EXP

FD1,2,OD1,2,ID1,2	0401-000101	DIODE-SWITCHING;1N4148,100V,200MA,5	
KD401,402,403,404,405,CD810			
CD803,804,805,811,812,802			
RD704,705	0402-000125	DIODE-RECTIFIER;1N4001,50V,1A,DO-41	A4104-0001
RD701	0402-000450	DIODE-BRIDGE;PBL403,200V,4.0A,DIP-4	12169-219-330
RZD701,702	0403-000379	DIODE-ZENER;UZP12B,12V,11.4-12.6V,1	12169-403-910
RZD704	0403-000394	DIODE-ZENER;UZP5.6B,5.6V,5.2-6.0V,1	12169-404-110
UZD901,RZD703	0403-000399	DIODE-ZENER;UZP9.1B,9.1V,8.5-9.6V,1	12169-403-340
OVD1	0405-000138	DIODE-VARACTOR;KV1236,20V,100NA,TO-	12169-501-005
JQ301,351,302,352,CQ806	0501-000010	TR-SMALL SIGNAL;KSC1008-Y,NPN,80V,6	12149-301-050
RQ703,UQ903			
CQ805,808	0501-000294	TR-SMALL SIGNAL;-,PNP,800MW,TO-92,T	12149-101-560
OQ4,IQ2	0501-000303	TR-SMALL SIGNAL;-,PNP,250MW,TO-92,-	12149-101-520
IQ1	0501-000392	TR-SMALL SIGNAL;-,NPN,250MW,TO-92,-	12149-301-860
KQ431	0501-000394	TR-SMALL SIGNAL;-,NPN,250MW,TO-92,-	12149-301-840
OQ1,2,3	0501-000398	TR-SMALL SIGNAL;-,NPN,250MW,TO-92,T	12149-301-900
KQ401,451,UQ904,954,			
AQ603, SQ201,251,SQ202,			
AQ601,651			
RQ702,UQ902	0501-000610	TR-SMALL SIGNAL;KSA928A,PNP,-30V,-3	
UQ901	0502-000299	TR-POWER;KSD73,NPN,100V,60V,5A,30W,	12149-401-070
RQ701,704	0502-000304	TR-POWER;KSD882,NPN,40V,30V,3A,1W,T	12149-401-900
RQ705	0502-000407	TR-POWER;KTC4369-Y,NPN,30V,30V,3A,1	A4050-0037
IQ4	0504-000118	TR-DIGITAL;KSR1003,NPN,300MW,22K-22	12159-301-780
JQ304,354,KQ402,452,403,	0504-000121	TR-DIGITAL;KSR1007,NPN,300MW,22K-47	12159-301-800
KQ453			
IQ3,JQ303,KQ404,AQ602	0504-001003	TR-DIGITAL;KSR2003,PNP,300MW,22K-22	
OQ5	0505-000236	FET-SILICIN;2SK583,N,50V,200MA,20OH	12139-601-450
AIC1	1201-000334	IC-POWER AMP;8207,SIP,12P,-,DUAL,-,	12119-101-290
JIC1	1201-000358	IC-PREAMP;22291,DIP,24P,-,DUAL,-,PL	A4012-0070
RIC1	1203-000276	IC-POSI.FIXED REG.;7805,TO-220,3P,-	12119-601-770
QIC1	1204-001031	IC-VOLUME CONTROL;LC75394E,QFP,64P,	

Loc No.	New Part No.	Description	Specification	Old Part No.
RR723,724	13954-100-310	CERAMIC-PIPE;PI1.4 15MM WHT		
IR3	2001-000003	R-CARBON;330OHM,5%,1/8W,AA,TP,1.8X3		11018-877-331
IR2	2001-000005	R-CARBON;390OHM,5%,1/8W,AA,TP,1.8X3		11018-877-391
KR408,458	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-153
KR435	2001-000038	R-CARBON;390OHM,5%,1/4W,AA,TP,2.4X6		11018-277-391
UR907,957,ZR102,152	2001-000241	R-CARBON;1.5KOHM,5%,1/8W,AA,TP,1.8X		11018-877-152
OR1,2,JR315,QR505,555	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X		11018-877-104
IR32,KR409,412,QR503	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3		11018-877-101
OR9,IR11,12,CR816,JR308, JR358,JR322,372,CR821,822, AR604,654	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-103
AR603,653	2001-000325	R-CARBON;120OHM,5%,1/8W,AA,TP,1.8X3		11018-877-121
OR6,KR432	2001-000331	R-CARBON;12KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-123
KR407,457	2001-000356	R-CARBON;150KOHM,5%,1/8W,AA,TP,1.8X		11018-877-154
JR314	2001-000362	R-CARBON;150OHM,5%,1/8W,AA,TP,1.8X3		11018-877-151
JR303,353,304,354,AR602, AR652,SR204,UR903,IR8, JR310	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.		11018-877-102
OR10,IR1,19,20,22,CR825, CR828,IR23,KR402,452 QR504,554,UR904,954,AR601, AR651,AR605	2001-000449	R-CARBON;2.2KOHM,5%,1/8W,AA,TP,1.8X		11018-877-222
IR5,JR307,357	2001-000515	R-CARBON;220OHM,5%,1/8W,AA,TP,1.8X3		11018-877-221
QR502,552,RR706,UR908 CR817,818,819,820	2001-000522	R-CARBON;22KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-223
IR31,AR707	2001-000525	R-CARBON;22OHM,5%,1/4W,AA,TP,2.4X6.		11018-277-220
KR433	2001-000527	R-CARBON;22OHM,5%,1/8W,AA,TP,1.8X3.		11018-877-220
OR7,IR21	2001-000548	R-CARBON;270KOHM,5%,1/8W,AA,TP,1.8X		11018-877-274
AR606,656	2001-000552	R-CARBON;270OHM,5%,1/4W,AA,TP,2.4X6		11018-277-271
IR13,14	2001-000563	R-CARBON;27KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-273
IR9,15,16,KR434	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X		11018-877-332
RR722	2001-000611	R-CARBON;3.9KOHM,5%,1/4W,AA,TP,2.4X		11018-277-392
SR201,251,205,255	2001-000613	R-CARBON;3.9KOHM,5%,1/8W,AA,TP,1.8X		11018-877-392
ZR101,151	2001-000660	R-CARBON;33OHM,5%,1/8W,AA,TP,1.8X3.		11018-877-333
IR4	2001-000666	R-CARBON;33OHM,5%,1/8W,AA,TP,1.8X3.		11018-877-330
UR906,956	2001-000702	R-CARBON;39KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-393
JR311,RR718,720,721, UR905,CR829	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,1.8X		11018-877-472
KR410	2001-000773	R-CARBON;470KOHM,5%,1/8W,AA,TP,1.8X		11018-877-474
IR17,18,6,AR608	2001-000786	R-CARBON;47KOHM,5%,1/8W,AA,TP,1.8X3		11018-877-473
OR3,4,5,8,IR7,10,25,26,27, FR6,JR305,355,QR501 JR305,355,QR501,551,CR805	2001-000812	R-CARBON;5.6KOHM,5%,1/8W,AA,TP,1.8X		11018-877-562
FR5	2001-000817	R-CARBON;5.6OHM,5%,1/8W,AA,TP,1.8X3		11018-877-569
JR301,351,JR302,352,KR401, KR451,KR411,RR719	2001-000890	R-CARBON;6.8KOHM,5%,1/8W,AA,TP,1.8X		11018-877-682
IR30	2001-000977	R-CARBON;8.2KOHM,5%,1/8W,AA,TP,1.8X		11018-877-822
KR403,453	2001-001006	R-CARBON;82OHM,5%,1/8W,AA,TP,1.8X3.		11018-877-820
RR705	2001-001050	R-CARBON(S);1.5KOHM,5%,1/2W,AA,TP,2		11018-377-152
RR704,709,710,UR901	2001-001138	R-CARBON(S);390OHM,5%,1/2W,AA,TP,2.		11018-377-391

Loc No.	New Part No.	Description	Specification	Old Part No.
IC17,29,34	2401-001895	C-AL;100UF,20%,16V,GP,6.3X11MM,2.5M		
QC518,568,522,523,AC611, RC710				
IC11,13,26,27,KC410,RC706	2401-001912	C-AL;1UF,20%,50V,GP,5X11MM,2MM,BK		
QC501,551,QC502,552,503,553				
IC5,QC520,570,AC603,653,				
SC203,OC12,QC521,571,				
RC718,				
KC410,RC708,711	2401-001912	C-AL;1UF,20%,50V,GP,5X11MM,2MM,BK		
AC609	2401-001925	C-AL;2200UF,20%,25V,GP,16X25MM,7.5M		11607-104-222
RC701	2401-001942	C-AL;3300UF,20%,35V,GP,18X35.5MM,7.		11607-105-332
QC504,554	2401-001954	C-AL;4.7UF,20%,50V,GP,5X11MM,2.5MM,		
QC509,559	2401-001968	C-AL;470NF,20%,50V,GP,5X11MM,2MM,BK		
CC806,UC905	2401-001975	C-AL;47UF,20%,16V,GP,5X11MM,2MM,BK		
SC202	2401-002180	C-AL;2.2UF,0.2,50V,GP,5X11,5MM,TP		
OCT1,2,3,4	2502-000127	C-CERAMIC TRIMMER;20-4.6PF,+50-0%,1		11829-512-030
IL1,AL602,652,603,ZL101	2701-000114	INDUCTOR-AXIAL;10UH,10%,2.5X3.4MM		12429-411-100
ICF4	2802-000215	RESONATOR-CERAMIC;19KHZ,+-38HZ,-,7.		14539-504-100
ICF1,3	2903-000105	FILTER-CERAMIC;BP,10.7MHZ+-25KHZ		14529-301-753
ICF5	2903-000148	FILTER-CERAMIC;BP,450KHZ+-1KHZ		A1243-0049
FCON1,TCON2	3711-000820	CONNECTOR-HEADER;BOX,2P,1R,2.5MM,ST		13349-512-561
CCON801	3711-001055	CONNECTOR-HEADER;BOX,6P,1R,2.5MM,ST		13349-512-565
UCW901	3711-001137	CONNECTOR-HEADER;BOX,8P,1R,2MM,STRA		13349-119-080
SCON1	3711-003080	CONNECTOR-HEADER;NOWALL,28P,1R,1.25		
JCON302	3711-003110	CONNECTOR-HEADER;BOX,4P,1R,2.5MM,ST		
FJ1	3716-000197	TERMINAL-BLOCK;NON SOLDER,2P,4MM,-,		A3059-0014
AJ1	3716-000209	TERMINAL-BLOCK;,-,-,60V,7A		13303-500-620
QJ1	3722-000377	JACK-RCA;4P/2C,3.5MM,SN,BLK,#16~22		A3040-0218
AJ2	3722-000495	JACK-PHONE;11P,3.5MM,-,AG		
IIC1	AH14-10002D	IC;LA1851N,-,		
IT1	AH26-10001C	TRANS-IF;KS940228-10,FM,-,7.6X12.0,		12619-020-067
IT2	AH26-10001E	TRANS-IF;KS940228-09,-,-,7.6X12.0,-		12619-030-005
OT2	AH26-10001J	TRANS-IF;KS940228-01,-,300UH,7.6X12		12619-047-202
OT1	AH26-10001K	TRANS-IF;KS940228-02,-,110UH,7.6X12		12619-047-203
OL2	AH26-10002F	TRANS-IF;KS940228-11,LW,2.4MH,7.6X1		12619-566-913
KT431	AH26-10002G	TRANS-IF;IODT-N5002,BIAS-OSC,3.7MH,		12619-573-071
KLF401,451	AH26-10002Y	COIL-TRAP;FB875-85A,BIAS-TRAP,35DB,		12429-306-113
OL1	AH26-10003A	COIL-TRAP;KS940228-13,MW-ANT,250UH,		12619-561-000
RCW1	AH39-20008X	LEAD-CONNECTOR ASS'Y;5264,5395,3P,2		13078-473-120
UCW901	AH39-20559H	LEAD CONNECTOR-ASSY;-,51004-08,5001		
FM PACK	AH40-10001U	TUNER;FE337-A05,-,75OHM		B1290-0002
	AH62-30061A	HEAT SINK-S;AL,EXTR,WHT,40H,AV330R,		15684-507-510
	AH62-30107A	HEAT SINK;-,AL,-,T6.0,-,WHT,-,SCM-6		

G3A8-1/16/C ASSY CD PACK;G3A8 TOP CD MM16/26/CK

ND200,201,202,203	0401-000101	DIODE-SWITCHING;1N4148,100V,200MA,5		
NZD101	0403-000358	DIODE-ZENER;UZ5.6BSB,5.6V,5.46-5.7V		12169-404-790
NQ1502	0501-000323	TR-SMALL SIGNAL;-,PNP,800MW,TO-92,T		12149-202-050
NQ1501	0501-000610	TR-SMALL SIGNAL;KSA928A,PNP,-30V,-3		
NIC9282	0904-000157	IC-DSP;9282,-,QFP,80P,-,16.9344MHZ,		A4012-0291

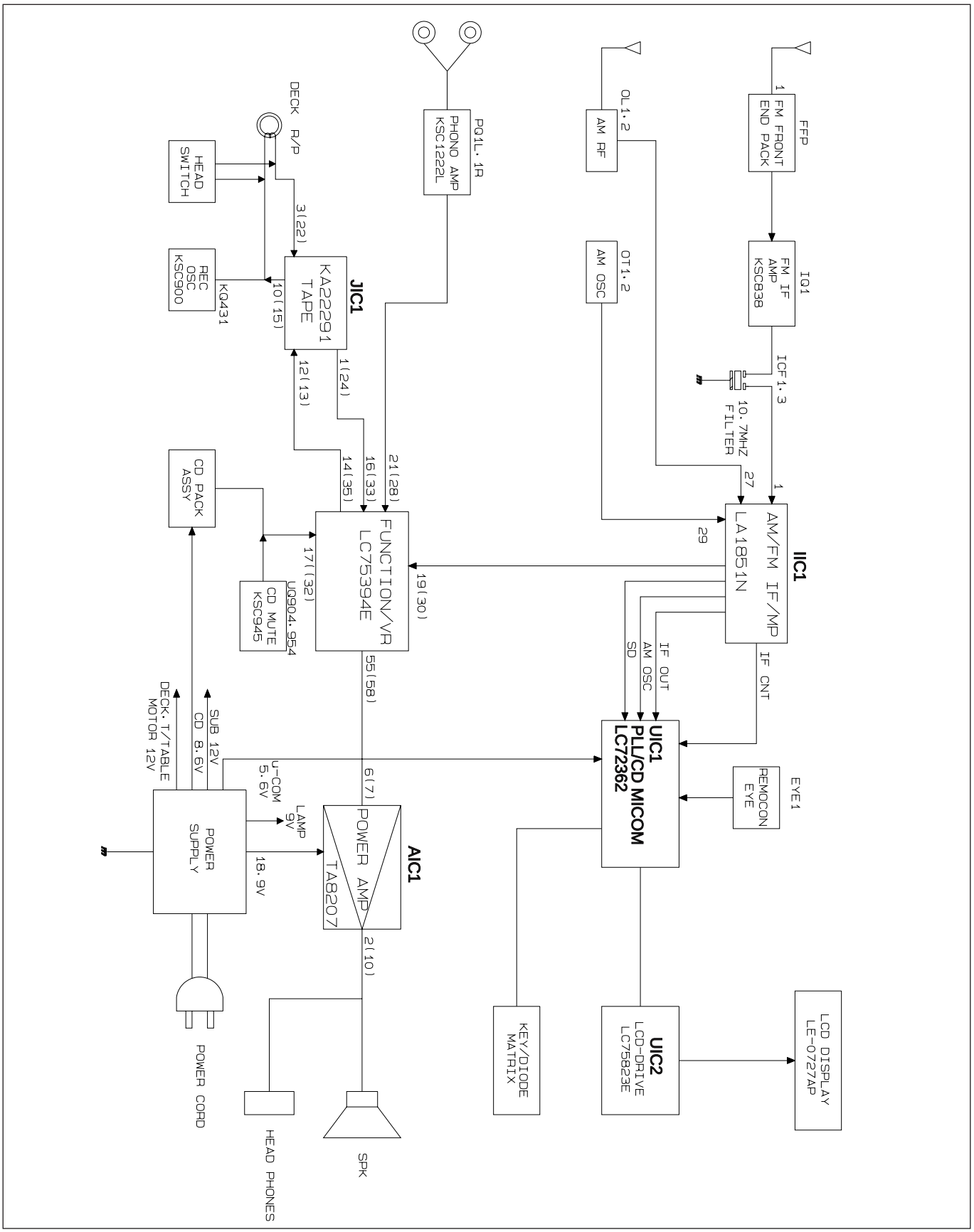
Loc No.	New Part No.	Description Specification	Old PartNo.
RR723,724	2003-000650	R-METAL OXIDE(S);330OHM,5%,2W,AA,TP	11048-577-331
RR711	2008-000127	R-FUSIBLE;10OHM,5%,2W,AA,TP,6.5X17M	11058-577-100
RR701,702,703,707	2008-000157	R-FUSIBLE;4.7OHM,5%,1/4W,AA,TP,2.6X	11058-277-479
ISVR1	2103-000461	VR-SEMI;50KOHM,30%,1/10W,TOP	11249-102-064
ISVR2	2103-000492	VR-SEMI;5KOHM,30%,1/10W,TOP	11249-102-024
FC3,QC507,557	2201-000144	C-CERAMIC,DISC;100PF,5%,50V,NPO,8.0	11407-057-101
OC8,10,IC3,14	2201-000565	C-CERAMIC,DISC;47NF,20%,50V,Y5V,12.	11417-344-473
OC7	2201-000652	C-CERAMIC,DISC;68PF,5%,50V,RH,6.5*3	11407-047-680
IC8,10,19,AC602,652,IC22 JC304,354,KC401,451,436, JC437,QC519,569,UC902, UC952,ZC101,151	2202-000781	C-CERAMIC,MLC-AXIAL;100PF,10%,50V,Y	11449-518-101
IC23	2202-000796	C-CERAMIC,MLC-AXIAL;1NF,10%,50V,Y5P	11449-518-102
IC1,20,21,KC409	2202-000807	C-CERAMIC,MLC-AXIAL;22NF,+80-20%,25	11448-010-223
QC516,566	2202-000825	C-CERAMIC,MLC-AXIAL;680PF,10%,50V,Y	11449-518-681
JC302,352	2202-000848	C-CERAMIC,MLC-AXIAL;1.5NF,0.3,50V,Y	
JC309,359,KC404,454,407, JC457,QC514,564	2202-000850	C-CERAMIC,MLC-AXIAL;2.2NF,0.3,16V,Y	
OC2,IC2,28,33,FC4,	2202-000854	C-CERAMIC,MLC-AXIAL;47NF,0.3,50V,Y5	
QC512,562	2202-000855	C-CERAMIC,MLC-AXIAL;6.8NF,0.3,16V,Y	
KC432,433	2301-000379	C-FILM,PEF;10NF,10%,50V,6X7X3.2MM,5	
QC511,561,AC606,656, FTZ1,4	2301-000387	C-FILM,PEF;150NF,10%,50V,12.5X15X7.	11505-714-154
QC515,565	2301-000390	C-FILM,PEF;15NF,10%,50V,6.5X9X3.5MM	
IC7	2301-000393	C-FILM,PEF;18NF,10%,50V,6.5X12.5X3.	
KC434	2301-000400	C-FILM,PEF;1NF,10%,50V,5X7X2.8MM,5M	
JC306,356,QC510,560,517, QC567	2301-000412	C-FILM,PEF;22NF,10%,50V,6.5X10.5X4M	
OC11	2301-000419	C-FILM,PEF;27NF,10%,50V,7.5X10.5X4M	
IC6	2301-000422	C-FILM,PEF;3.3NF,10%,50V,5.5X7X3MM,	
IC24,25	2301-000430	C-FILM,PEF;33NF,10%,50V,7.5X11X4MM,	
QC513,563	2301-000456	C-FILM,PEF;56NF,10%,50V,8X12X4.5MM,	
SC201,251	2301-000469	C-FILM,PEF;68NF,10%,50V,9X12X4.5MM,	
OC5,9	2302-000235	C-FILM,PSF;470PF,5%,50V,6X11.5,2.5M	11509-452-120
AC607,657	2401-000131	C-AL;1000UF,20%,16V,GP,10X20MM,5MM,	11609-401-510
JC311	2401-000240	C-AL;100UF,20%,10V,GP,6*11MM,5MM,TP	11608-102-104
RC703,704,705,AC608,605, AC655,AC3,RC707	2401-000303	C-AL;100UF,20%,25V,GP,6.3*11,2.5MM,	11608-104-104
IC9,15,18,QC506,556, RC713	2401-000419	C-AL;10UF,20%,16V,GP,5X11,2.5MM,	
RC712	2401-000438	C-AL;10UF,20%,25V,GP,5*11,2MM,	11608-104-103
JC313	2401-000795	C-AL;220UF,20%,16V,GP,8X11.5,3.5MM,	
RC709,UC903	2401-000830	C-AL;220UF,20%,25V,GP,8*11.5,3.5MM,	11608-104-221
CC802,803,804	2401-000907	C-AL;22UF,20%,16V,GP,5*11,2MM,	11608-103-223
IC12,JC310,360,KC402,452 KC406,456,QC505,555,508, KC558	2401-001022	C-AL;3.3UF,20%,50V,GP,5*11,2MM,	11608-106-332
UC901	2401-001102	C-AL;330UF,20%,16V,GP,8X11,-,	
JC303,353,KC403,453, AC604,AC654,KC408,431	2401-001465	C-AL;47UF,20%,10V,GP,5*11,2MM,	11608-102-473

Loc No.	New Code No.	Description Specification	Old Code No.
NIC9258	1003-000179	IC-MOTOR DRIVER;KA9258D,SOP,28P,-,S	
NIC9270	1204-000110	IC-AUDIO FILTER;KA9270,SOP,20P,-,PL	A4012-0089
NIC9220	1204-001041	IC-ASP;KA9220B,QFP,80P,-,PLASTIC,6V	
NR605	2007-000001	R-CHIP;68KOHM,5%,1/10W,DA,TP,2012	11119-101-683
NR606,611,608,609,610	2007-000029	R-CHIP;0OHM,5%,1/10W,DA,TP,2012	11119-101-000
NR47L,47R,104,203,NRD	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	11119-101-104
NR106,107	2007-000338	R-CHIP;120KOHM,5%,1/10W,DA,TP,2012	11119-101-124
NR41L,41R,204,191,100	2007-000355	R-CHIP;12KOHM,5%,1/10W,DA,TP,2012	11119-101-123
NR190	2007-000355	R-CHIP;12KOHM,5%,1/10W,DA,TP,2012	11119-101-123
NR103,119	2007-000395	R-CHIP;150KOHM,5%,1/10W,DA,TP,2012	11119-101-154
NR110	2007-000409	R-CHIP;15KOHM,5%,1/10W,DA,TP,2012	11119-101-153
NR115	2007-000444	R-CHIP;180KOHM,5%,1/10W,DA,TP,2012	11119-101-184
NR102,109,205,45L,45R	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	11119-101-102
NR42L,42R,114	2007-000477	R-CHIP;1MOHM,5%,1/10W,DA,TP,2012	11119-101-105
NR40L,40R	2007-000586	R-CHIP;22KOHM,5%,1/10W,DA,TP,2012	11119-101-223
NR101	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	11119-101-220
NR43L,43R,200	2007-000653	R-CHIP;27KOHM,5%,1/10W,DA,TP,2012	11119-101-273
NR201,202	2007-000686	R-CHIP;3.3KOHM,5%,1/10W,DA,TP,2012	11119-101-332
NR105	2007-000830	R-CHIP;39KOHM,5%,1/10W,DA,TP,2012	11119-101-393
NR44L,44R,46L,46R	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	11119-101-472
NR117	2007-000898	R-CHIP;430KOHM,5%,1/10W,DA,TP,2012	11119-101-434
NR111,108	2007-000941	R-CHIP;47KOHM,5%,1/10W,DA,TP,2012	11119-101-473
NR112	2007-001039	R-CHIP;56KOHM,5%,1/10W,DA,TP,2012	11119-101-563
NR113	2007-001177	R-CHIP;8.2KOHM,5%,1/10W,DA,TP,2012	11119-101-822
NR116	2007-001195	R-CHIP;820KOHM,5%,1/10W,DA,TP,2012	11119-101-824
NR118	2007-001213	R-CHIP;82OHM,1%,1/10W,DA,TP,2012	11119-102-820
NR555	2008-000141	R-FUSIBLE;2.2OHM,5%,1/4W,AA,TP,2.6X	11058-277-229
NVR1701	2103-000007	VR-SEMI;50KOHM,30%,1/10W,SIDE	11249-102-063
NVR1702,1703,1704	2103-000291	VR-SEMI;20KOHM,30%,1/10W,SIDE	11249-102-043
NC119,120,121,107,108 NC603	2203-000199	C-CERAMIC,CHIP;100NF,+80-20%,50V,Z5	
NC205,110,116,102,103 43R,44L,500,600,601,602	2203-000260	C-CERAMIC,CHIP;10NF,10%,50V,X7R,201	11129-004-103
NC700,701	2203-000260	C-CERAMIC,CHIP;10NF,10%,50V,X7R,201	11129-004-103
NC1000,1001	2203-000361	C-CERAMIC,CHIP;150PF,5%,50V,NPO,201	
NC112	2203-000495	C-CERAMIC,CHIP;2.2NF,10%,50V,X7R,20	11129-004-222
NC118	2203-000787	C-CERAMIC,CHIP;330PF,5%,50V,NPO,201	
NC113,125,101	2203-000802	C-CERAMIC,CHIP;33NF,10%,50V,X7R,201	11129-001-333
NC100	2203-000892	C-CERAMIC,CHIP;4.7NF,10%,50V,X7R,20	
NC204,124	2203-000925	C-CERAMIC,CHIP;470NF,+80-20%,50V,Y5	11128-018-474
NC200	2203-000979	C-CERAMIC,CHIP;47NF,10%,50V,X7R,201	
NC2000	2203-001026	C-CERAMIC,CHIP;4PF,0.25PF,50V,SL,20	
NC45R,46L	2203-001058	C-CERAMIC,CHIP;560PF,5%,50V,NPO,201	11129-019-561
NC111	2203-001105	C-CERAMIC,CHIP;6.8NF,10%,50V,X7R,20	11129-004-682
NC115	2203-001137	C-CERAMIC,CHIP;68NF,+80-20%,50V,Y5V	11129-004-683
NC190	2203-001256	C-CERAMIC,CHIP;8PF,0.25PF,50V,NPO,2	
NC109,104,42R,43L	2203-001537	C-CERAMIC,CHIP;1NF,10%,50V,X7R,2012	
NC41L,41R	2203-001550	C-CERAMIC,CHIP;1.2NF,10%,50V,X7R,20	
NC201	2203-001551	C-CERAMIC,CHIP;1.5NF,10%,50V,X7R,20	
NC202,203	2203-001619	C-CERAMIC,CHIP;27PF,5%,50V,NPO,2012	

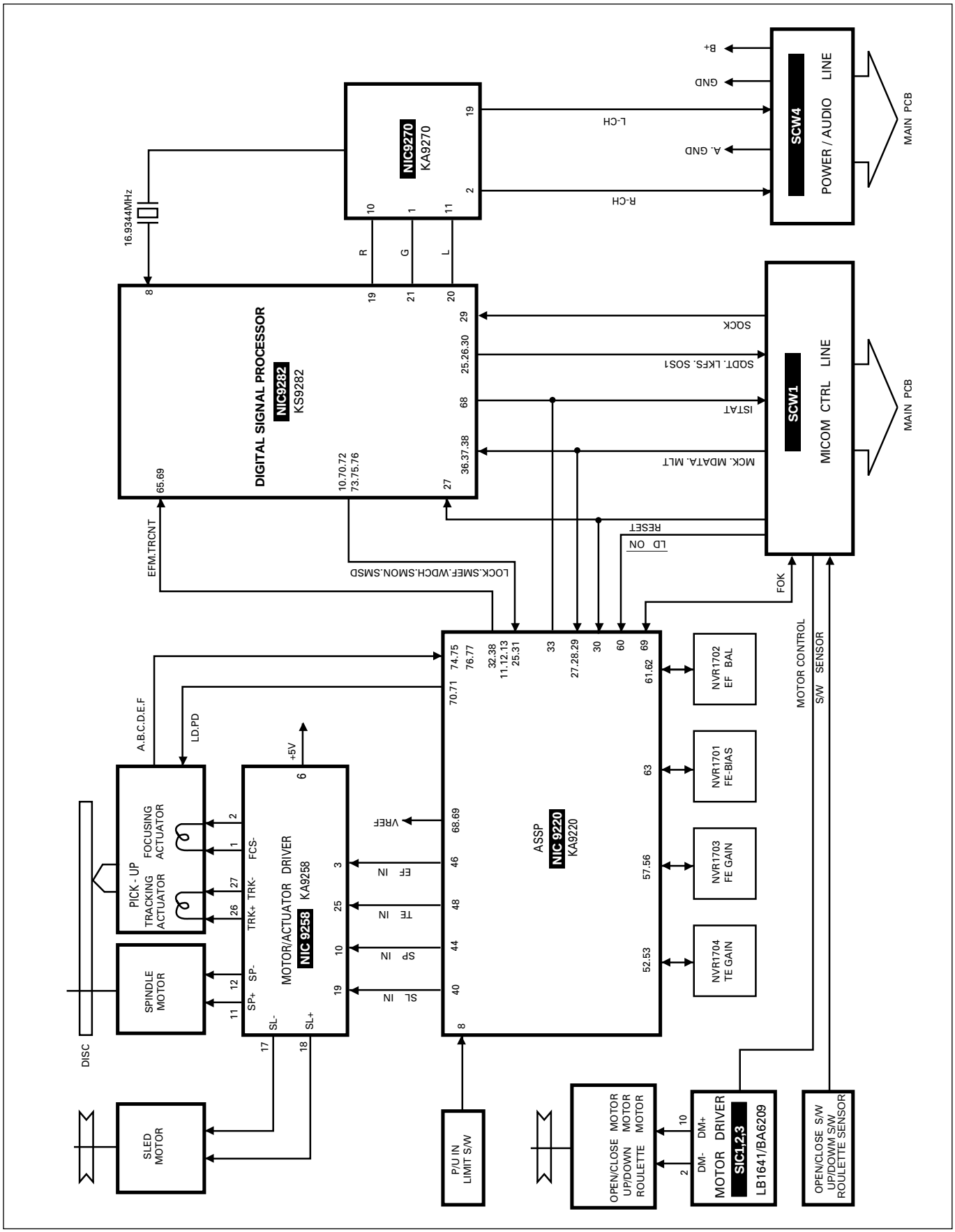
Loc No.	New Part No.	Description	Specification	Old Part No.
NC702,105	2401-000243	C-AL;100UF,20%,10V,GP,6.3*5,2.5MM,T		11608-152-101
NC114	2401-000419	C-AL;10UF,20%,16V,GP,5X11,2.5MM,		
NC703	2401-000778	C-AL;220UF,20%,10V,GP,6.3X11,2.5MM,		11608-102-224
NC700,701	2401-000868	C-AL;220UF,20%,4V,GP,6.3*5,2.5MM,TP		11608-171-221
NC45L,44R,40L,40R,122	2401-001238	C-AL;4.7UF,20%,25V,GP,3*5,1MM,TP		11608-154-479
NC42L	2401-001502	C-AL;47UF,20%,16V,GP,6.3*5,2.5MM,TP		11608-153-470
NC117	2401-001968	C-AL;470NF,20%,50V,GP,5X11MM,2MM,BK		
NL100	2703-000002	INDUCTOR-SMD;100UH,10%,2.5X3.2X2MM		11176-600-040
NXF100	2802-000211	RESONATOR-CERAMIC;16.93MHZ,0.5%,TP,		14539-503-083
NS100	3409-000174	SWITCH-LEAF;16VDC,500MA,10GF,SPST		13564-601-100
NCW100	3708-000177	CONNECTOR-FPC/FC/PIC;16P,1.0MM,ANGL		A6010-1523
NCW103	3708-000413	CONNECTOR-FPC/FC/PIC;16P,1.25MM,ANG		A6010-1525
NCW101	3711-001136	CONNECTOR-HEADER;BOX,8P,1R,2MM,ANGL		13349-139-080
NIC05	AC14-12001G	IC;KA78L05,T,-		

9. Block Diagrams

9-1 Main



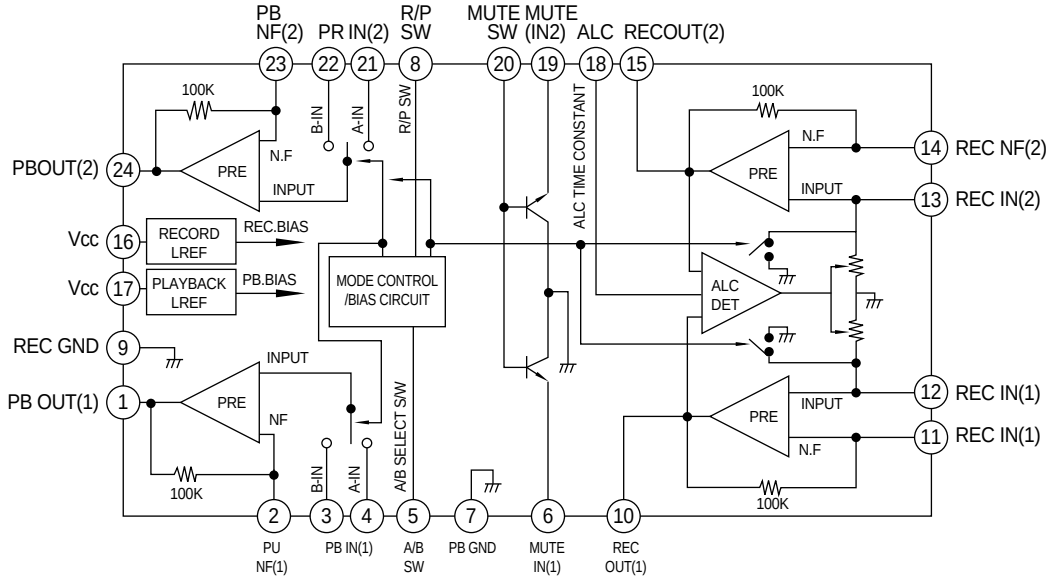
9-2 CD


B+
GND
A. GND
L-CH
R-CH
SCW4
POWER / AUDIO LINE
MAIN PCB
NIC9270
KA9270
16.9344MHz
R
G
L
DIGITAL SIGNAL PROCESSOR
NIC9282
KS9282
SOCK
SODT. LKFS. SOS1
ISTAT
MCK. MDATA. MLT
SCW1
MICOM CTRL LINE
MAIN PCB
RESET
LD ON
EFM.TRCNT
LOCK.SMEF.WDCH.SMON.SMSD
FOK
MOTOR CONTROL
S/W SENSOR
A.B.C.D.E.F
LD.PD
+5V
VREF
ASSP
NIC 9220
KA9220
NVR1702
EF BAL
NVR1701
FE-BIAS
NVR1703
FE GAIN
NVR1704
TE GAIN
PICK - UP
TRACKING
ACTUATOR
FOCUSING
ACTUATOR
FCS-
TRK+
TRK-
MOTOR/ACTUATOR DRIVER
NIC 9258
KA9258
SP+
SP-
SL-
SL+
EF IN
TE IN
SP IN
SL IN
SPINDLE
MOTOR
SLED
MOTOR
DISC
P/U IN
LIMIT S/W
OPEN/CLOSE MOTOR
UP/DOWN MOTOR
ROULETTE MOTOR
DM+
DM-
MOTOR DRIVER
SIC1,2,3
LB1641/BA6209
OPEN/CLOSE S/W
UP/DOWM S/W
ROULETTE SENSOR

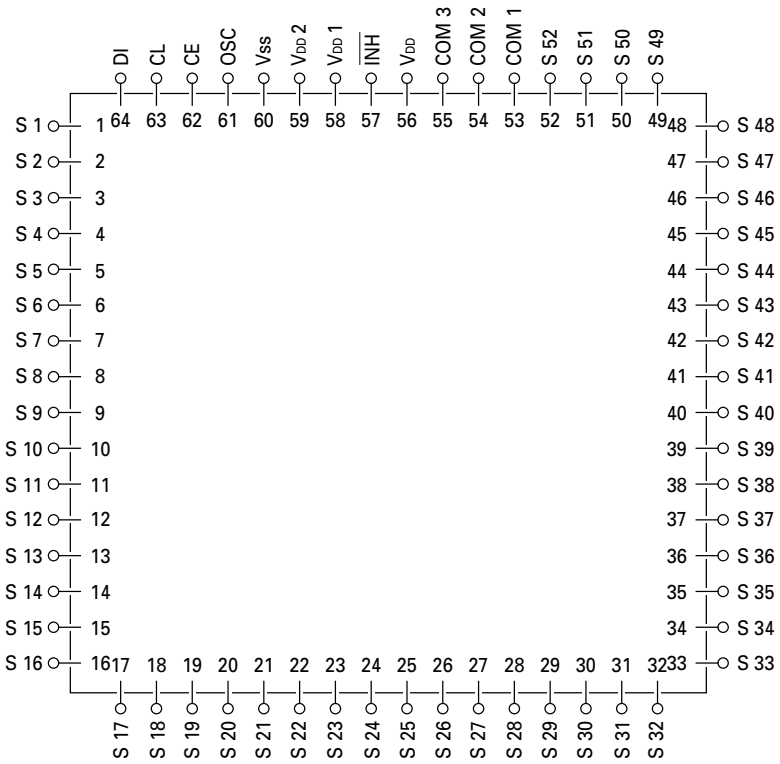
9-3 IC & TR Internal Diagrams

9-3-1 Main

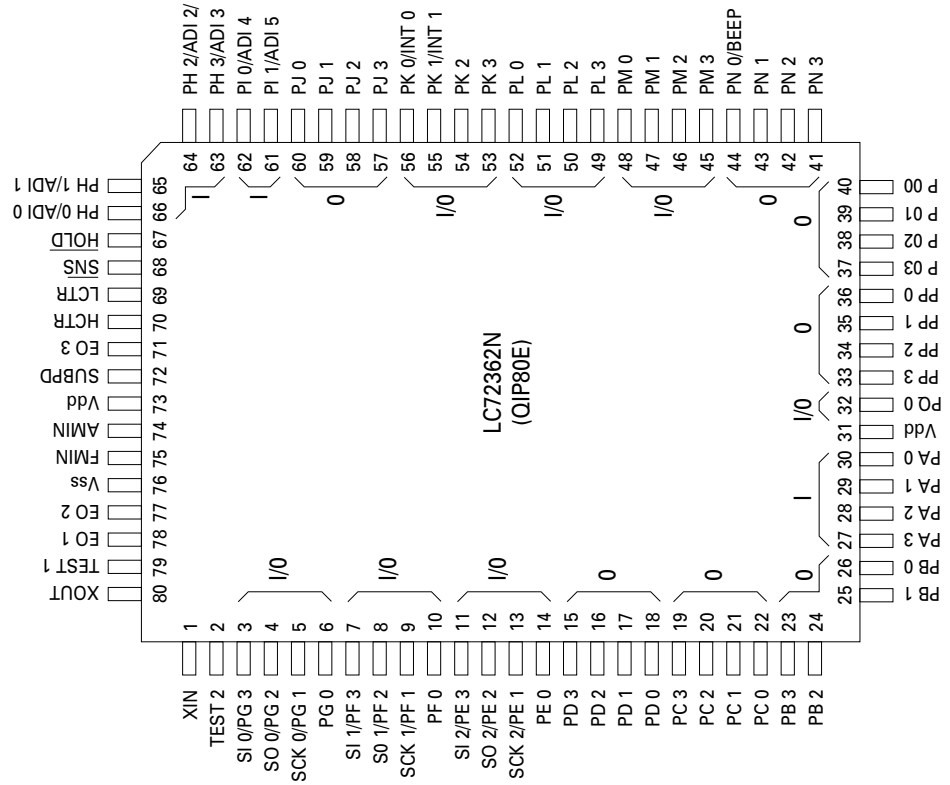
KA22291 : JIC1



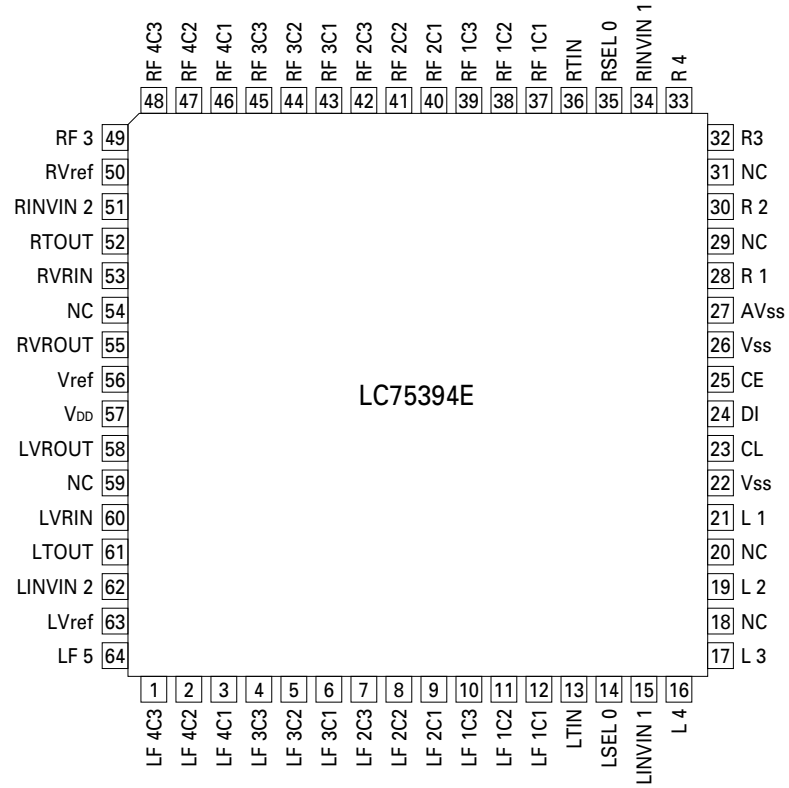
LC75823E : UIC2

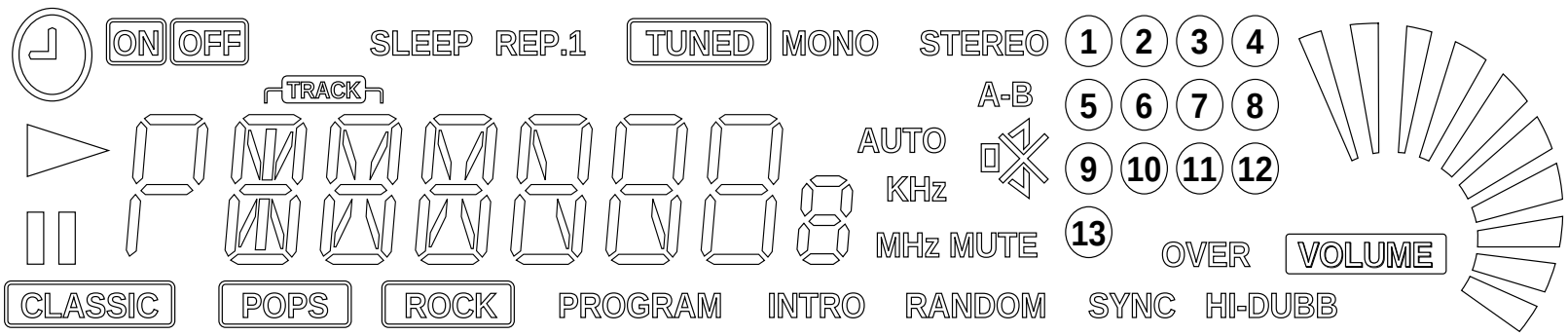


LC72362N : UIC1



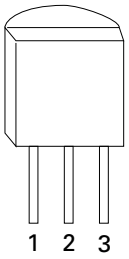
LC75394E : QIC1





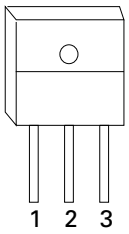
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
COM 1	com1	/	/		CLASSIC	TRACK	1f	1h	1a	2f	2h	2a	3f	3h	3a	SLEEP	4f	ROCK	4a	5f	5j
COM 2	/	/	com2	ON			1i	1g	1b	2e	2g	2b	3e	3g	3b	1	4e	4g	4b	5e	5g
COM 3	/	com3	/	OFF			1e	1d	1c	POPS	2d	2c	2j	3d	3c	REP	3j	4d	4c	4hj	5d
	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
COM 1	5a	MONO	6f	P	6a	7f	INTRO	7a	/	AUTO	MUTE	②	①	⑧	⑪	SYNC	S1	VOLUME	S6	S9	
COM 2	5b	/	6e	6g	6b	7e	7g	7b	STEREO	KHz	RANDOM	③	⑥	⑨	⑬	HI-DUBB	S2	S4	S7	S10	
COM 2	5c	TUNED	COL	6d	6c	PROGRAM	7d	7c	/	MHz	⑤	④	⑦	⑩	⑫	OVER	S3	S5	S8	A-B	

9-3-2 CD



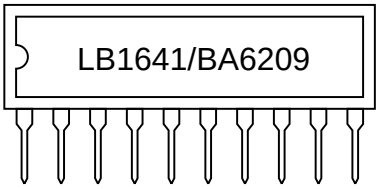
TR	1	2	3
KSR1003 KSR2003 KSR1007 KSA928 KSD882	E	C	B

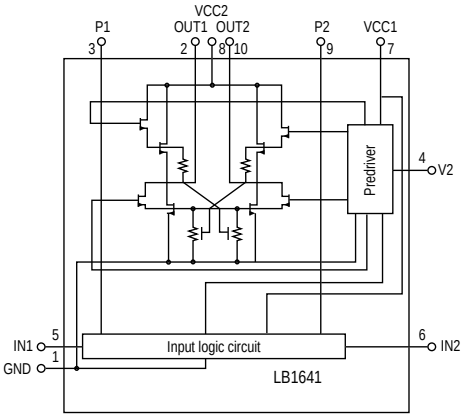
* NOTE : KSC838 ='EBC' TYPE
KSC900
KSC945
KSC1008
KSA708
KSA733



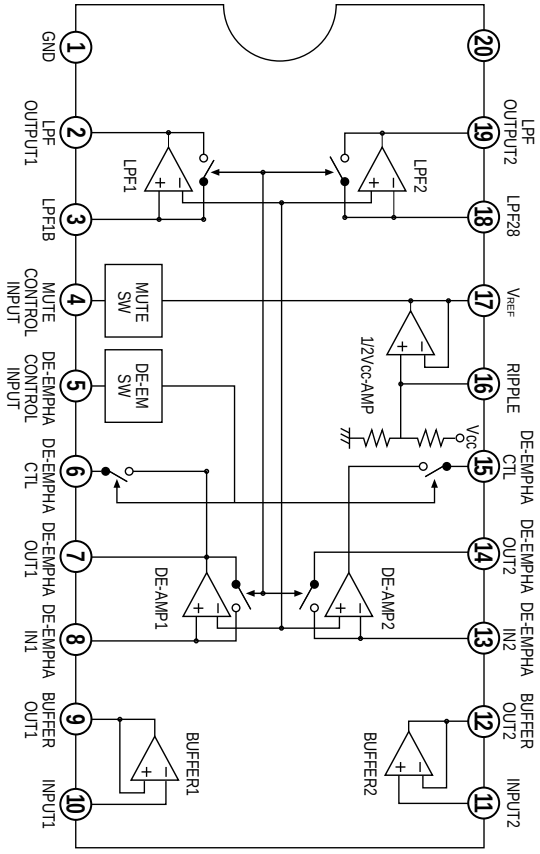
TR	1	2	3
KSC4369 KSD73	B	C	E

LB1641/BA6209(MOTOR DRIVER) : NIC1641 (OPTION)

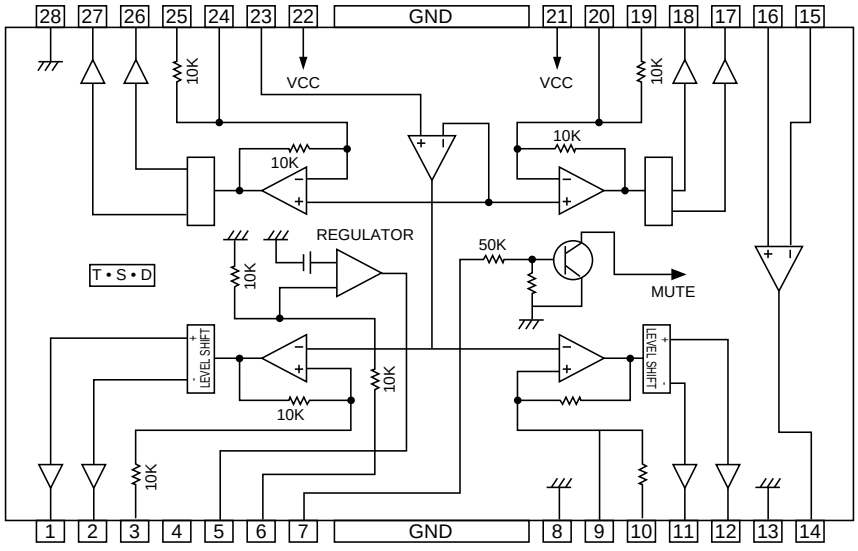




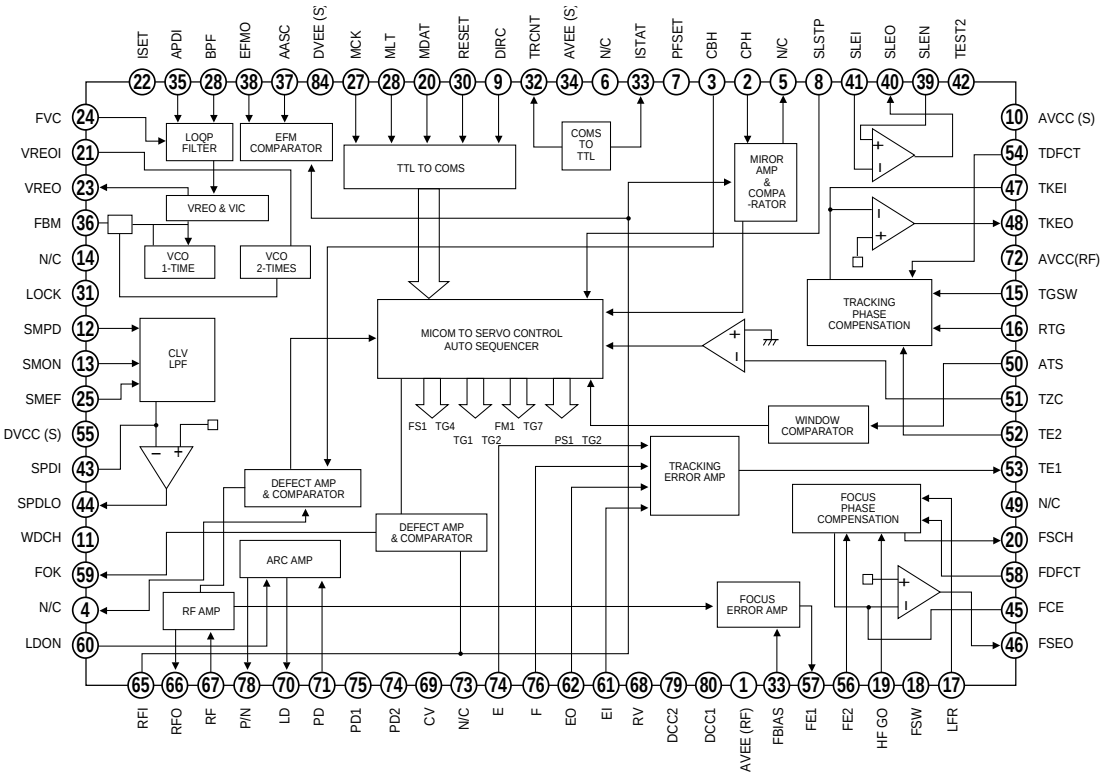
KA9270 : NIC9270



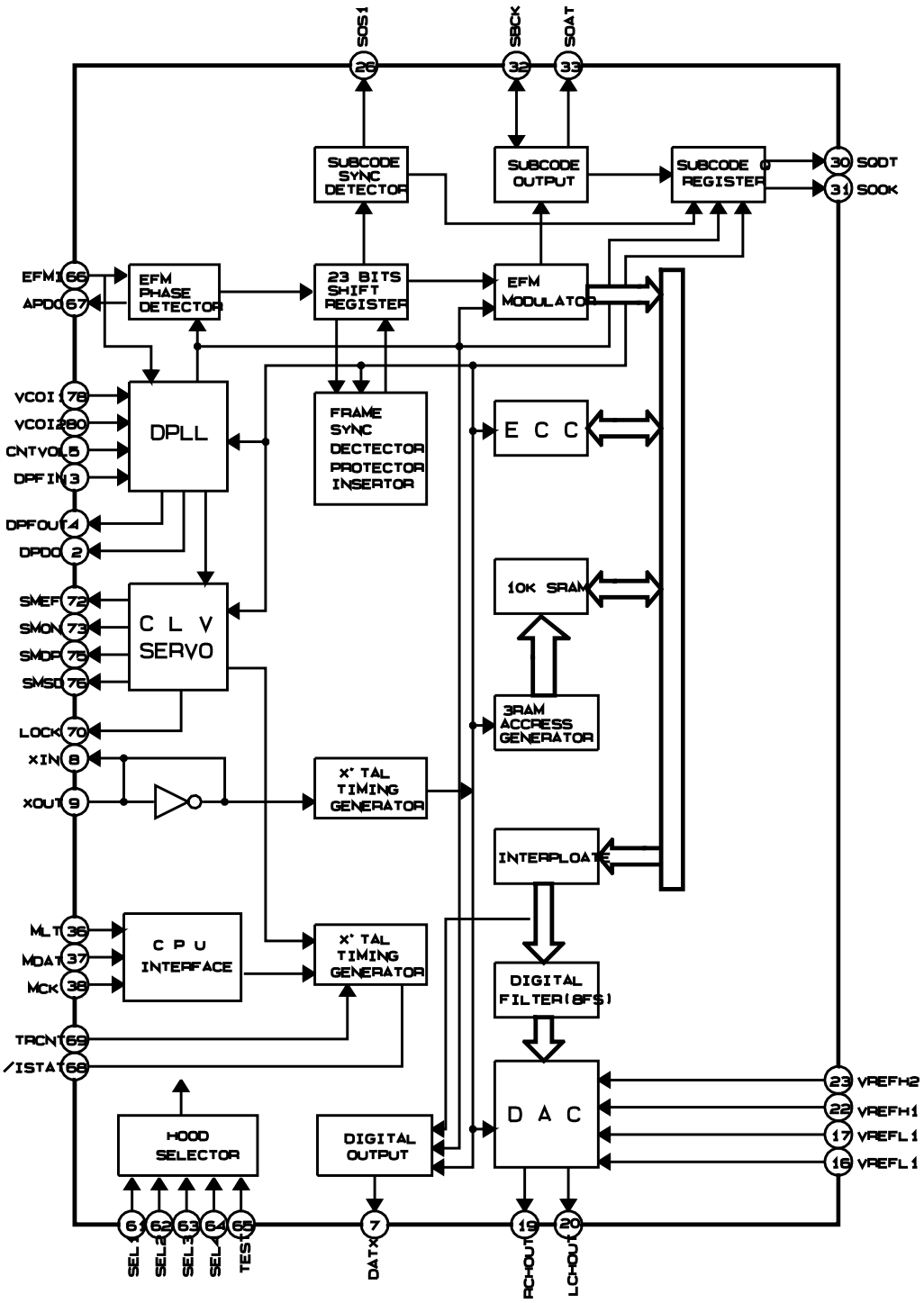
KA9258 : NIC9258



KA9220(ASSP) : NIC9220



KS9282(DSP) : NIC9282



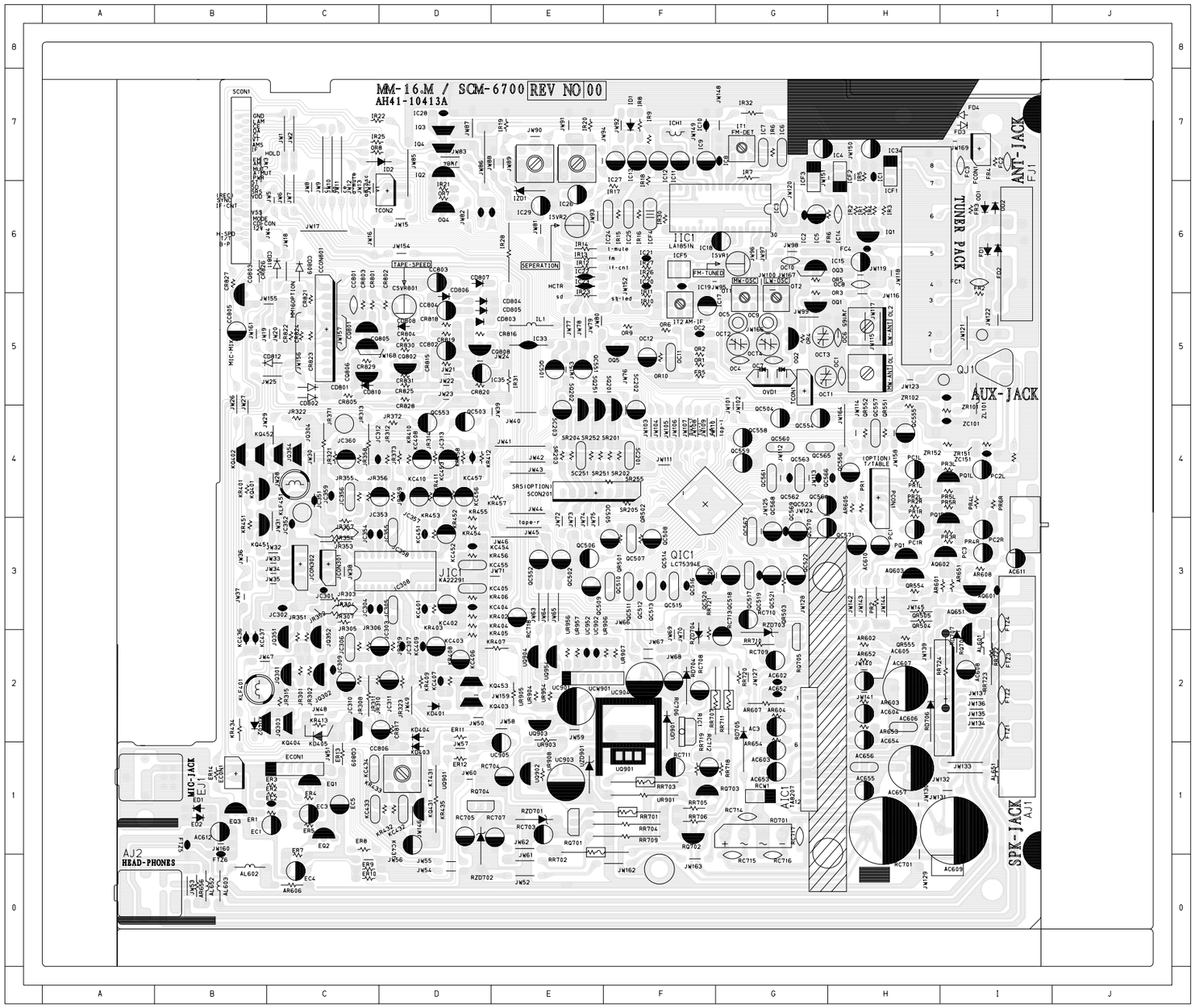
9-4 µ-COM (LC72362N-9265) : UIC1

Pin No.	Name	I/O	Functions	Descriptions
1	Xin	I	OSC 4.5MHz	OSC for SYSTEM CLOCK
2	TEST2	I	-	
3	PG3SI/O	I	CLOSE SW	DOOR CLOSE SENSE PORT
4	PG2/SO0	I	LCD CONTROL DATA	LCD CONTROL SIGNAL
5	PG1/SCK	I	LCD CONTROL CLK	LCD CONTROL SIGNAL
6	PG0	I	LCD CONTROL CE	LCD CONTROL SIGNAL
7	PF3/SI1	I	OPEN SW	DOOR OPEN SENSE PORT
8	PF2/SO1	I	VOLUME CONTROL DATA	VOLUME CONTROL SIGNAL
9	PF1/SCK1	I	VOLUME CONTROL CLK	VOLUME CONTROL SIGNAL
10	PFO	I	VOLUME CONTROL CE	VOLUME CONTROL SIGNAL
11	PE3/S12	O	SENSE	SERVO FUNCTION SIGNAL
12	PE2/SO2	I	SQDT	SUBCODE “Q” CHANNEL DATA
13	PE1/SCK2	I	SQCK	CLOCK for “Q” DATA
14	PE0	O	F OK	FOCUS OF SIGNAL
15	PD3	O	MLT	LATCH for MIAN DATA
16	PD2	O	MDATA	MAIN DATA
17	PD1	O	MCK	MAIN CLOCK
18	PD0	O	CLOSE	DOOR CLOSE CONTROL PORT
19	PC3	O	OPEN	DOOR OPEN CONTROL PORT
20	PC2	O	MUTE	CD MUTE CONTROL PORT
21	PC1	O	RESET	IC(SSP IC) RESET PORT
22	PC0	O	LD ON	LASER DIODE ON SIGNAL
23	PB3	O	MOTOR CONTROL	
24	PB2	O	FM MODE	MODE KEY ON/OFF MODE : “H”,”L” CONVERSION
25	PB1	O	IF CNT	When SD SIGNAL is L MODE : ACTION
26	PB0	O	HIGH SPEED MOTOR CTL	HIGH SPEED
27	PA3	I	TAPE PLAY	
28	PA2	I	TAPE REC	CD SYNCHRO RECORDING CONTROL
29	PA1	I	LKFS	INDICATE FRAME SYNCHRONIZATION STATUS
30	PO0	I	SOSI	SUBCODE SYNCHRONIZATION SIGNAL
31	Vdd	-		
32	PQ0	I/O		
33	PP3	O		
34	PP2	O		
35	PP1	O		
36	PP0	O	FUNCTION LED(TUNER)	FUNCTION IND LED CONTROL PORT(TUNER)
37	PO3	O	FUNCTION LED(TAPE)	FUNCTION IND LED CONTROL PORT(CD)
38	PO2	O	FUNCTION LED(CD)	CD B+ CONTROL
39	PO1	O	CD CONTROL	FUNCTION IND LED CONTROL PORT(PHONO
40	PO0	O	FUNCTION LED(PHONO or AUX)	of AUX)

Pin No.	Name	I/O	Functions	Descriptions
41	PN3	O	POWER CONTROL	PORT for TUNER FUNCTION
42	PN2	O	AUDIO MUTE	MUTE for AUDIO
43	PN1	O	TUNER MUTE	MUTE for TUNER FUNCTION
44	PN0/BEEP	O		
45	PM3	I/O		
46	PM2	I/O		
47	PM1	I	OPTION INPUT	PORT for OPTION DATA
48	PM0	I	OPTION INPUT	PORT for OPTION DATA
49	PL3	I	OPTION INPUT	PORT for OPTION DATA
50	PL2	O	OPTION INPUT	PORT for OPTION DATA
51	PL1	O	OPTION INPUT	PORT for OPTION DATA
52	PL0	O	OPTION INPUT	PORT for OPTION DATA
53	PK3	I/O	TUNING IND (SD)	TUNING INDICATER ON/OFF
54	PK2	I/O	STEREO IND	STEREO INDICATER ON/OFF
55	PK1/INT1	I/O		
56	PK0/INT0	I	REMOCON	REMOCON SIGNAL INPUT
57	PJ3	O	SRS	
58	PJ2	O	SW	
59	PJ1	O	MW	
60	PJ0	O	FM	
61	PI1/ADI5	I		
62	PI0/ADI4	I	KEY DATA	A/D INPUT (8 KEY)
63	PH3/ADI3	I	KEY DATA	A/D INPUT (8 KEY)
64	PH2/ADI2	I	KEY DATA	A/D INPUT (8 KEY)
65	PH1/ADI1	I	KEY DATA	A/D INPUT (8 KEY)
66	PH0/ADI0	I	KEY DATA	A/D INPUT (8 KEY)
67	$\overline{\text{HOLD}}$	I	POWER OFF SENSE	
68	$\overline{\text{SNS}}$	I	VOLTAGE SENSE	
69	LCTR	I		
70	HCTR	I	FM AM IF INPUT	FM & AM IF FREQUENCY INPUT PORT
71	EO3	O		
72	SUBPD	O		
73	Vdd	-		
74	AMIN	I	AM INPUT	AM OSC INPUT
75	FMIN	I	FM INPUT	FM OSC INPUT
76	Vss	-		
77	EO1	O	TUNER VOLTAGE CONTROL	FM TUNING VOLTAGE
78	EO2	O	TUNER VOLTAGE CONTROL	AM TUNING VOLTAGE
79	TEST1	-	-	
80	Xout	O	OSC 4.5MHZ	OSC for SYSTEM CLOCK

10. PCB Diagrams

10-1 Main



*** RESISTOR ***

* (I4)	IR9 (F7)	QR505 (H3)	AC3 (G2)	JC355 (D3)	RC703 (E1)
AR601 (I3)	JR301 (C2)	QR551 (H4)	AC602 (G2)	JC356 (C4)	RC704 (E1)
AR602 (H2)	JR302 (C2)	QR552 (H4)	AC603 (G1)	JC357 (D4)	RC705 (D1)
AR603 (H2)	JR303 (C3)	QR554 (H3)	AC604 (H2)	JC358 (D3)	RC706 (F2)
AR604 (G2)	JR304 (C3)	QR555 (H2)	AC605 (H2)	JC359 (C4)	RC707 (E1)
AR605 (H3)	JR305 (C2)	RR701 (E1)	AC606 (H2)	KC401 (D3)	RC708 (F2)
AR606 (C0)	JR306 (C2)	RR702 (E1)	AC607 (H2)	KC404 (D3)	RC709 (G2)
AR607 (G2)	JR307 (C3)	RR703 (F1)	AC608 (I2)	KC405 (D3)	RC710 (G3)
AR608 (I3)	JR308 (C2)	RR704 (E1)	AC609 (I1)	KC407 (D2)	RC711 (F1)
AR651 (I3)	JR309 (D2)	RR705 (F1)	AC610 (H3)	KC409 (D2)	RC712 (F1)
AR652 (H2)	JR310 (C2)	RR706 (F1)	AC611 (I3)	KC410 (D4)	RC713 (G2)
AR653 (H2)	JR311 (C2)	RR707 (G2)	AC612 (B1)	KC431 (D1)	RC714 (G1)
AR654 (G2)	JR312 (D4)	RR709 (E1)	AC652 (G2)	KC432 (D1)	RC715 (G0)
AR656 (B0)	JR313 (C4)	RR710 (G2)	AC653 (G1)	KC433 (C1)	RC716 (G0)
CR801 (C5)	JR314 (D4)	RR711 (G2)	AC654 (H2)	KC434 (C1)	RC717 (G1)
CR802 (D5)	JR315 (C2)	RR718 (G1)	AC655 (H1)	KC436 (B2)	RC718 (E3)
CR803 (C5)	JR321 (C4)	RR719 (F1)	AC656 (H1)	KC437 (B2)	SC201 (F4)
CR804 (D5)	JR322 (C4)	RR720 (G2)	AC657 (H1)	KC451 (D3)	SC202 (F5)
CR805 (C5)	JR323 (D2)	RR721 (F2)	CC801 (C5)	KC454 (D3)	SC203 (E5)
CR815 (D5)	JR351 (C2)	RR722 (I2)	CC802 (D5)	KC455 (D3)	SC251 (E4)
CR816 (D5)	JR352 (C2)	RR723 (I2)	CC803 (D6)	KC457 (D4)	UC901 (E2)
CR817 (D2)	JR353 (C3)	SR201 (F4)	CC804 (D5)	OC1 (H5)	UC902 (E2)
CR818 (D5)	JR354 (C3)	SR202 (F4)	CC805 (B5)	OC10 (G6)	UC903 (E1)
CR819 (D5)	JR355 (C4)	SR203 (E4)	CC806 (D2)	OC11 (F5)	UC904 (F2)
CR820 (D5)	JR356 (C4)	SR204 (E4)	EC1 (B1)	OC12 (F5)	UC905 (E1)
CR821 (C5)	JR357 (C3)	SR205 (F4)	EC2 (B1)	OC2 (F5)	UC952 (E2)
CR822 (C5)	JR358 (C4)	SR251 (E4)	EC3 (C1)	OC4 (G5)	ZC101 (H4)
CR823 (C5)	JR359 (D4)	SR252 (E4)	EC4 (C0)	OC6 (H5)	ZC151 (I4)
CR824 (C5)	JR371 (C4)	SR255 (E4)	EC5 (C1)	OC7 (G5)	
CR825 (D5)	JR372 (D4)	UR901 (F1)	FC1 (I6)	OC8 (H6)	
CR826 (B6)	JR373 (D4)	UR903 (E2)	FC2 (I7)	PC1 (H3)	
CR827 (B5)	KD405 (C2)	UR904 (E2)	FC3 (I7)	PC1L (H4)	
CR828 (D5)	KR401 (B4)	UR905 (E2)	FC4 (H6)	PC1R (H3)	
CR829 (C5)	KR402 (D3)	UR906 (F2)	FTZ1 (I2)	PC2L (I4)	
CR830 (D5)	KR403 (D3)	UR907 (F2)	FTZ2 (I2)	PC2R (I3)	
CR831 (D5)	KR404 (D3)	UR908 (E1)	FTZ3 (I2)	PC3 (I3)	
ER1 (B1)	KR405 (D2)	UR954 (E2)	FTZ4 (I2)	QC501 (E5)	
ER10 (C0)	KR406 (D3)	UR956 (E2)	FTZ5 (B1)	QC502 (E3)	
ER11 (D2)	KR407 (D2)	UR957 (E2)	FTZ6 (B1)	QC503 (D4)	
ER12 (D1)	KR408 (D2)	ZR101 (H4)	IC1 (H6)	QC504 (G4)	
ER13 (C1)	KR409 (D2)	ZR102 (H4)	IC10 (F7)	QC505 (F3)	
ER14 (B1)	KR410 (D4)	ZR151 (I4)	IC11 (F7)	QC506 (E3)	
ER2 (B1)	KR411 (D4)	ZR152 (H4)	IC12 (F7)	QC507 (F3)	
ER3 (B1)	KR412 (D4)		IC13 (F7)	QC508 (F3)	
ER4 (C1)	KR432 (D1)		IC14 (H6)	QC509 (E3)	
ER5 (C1)	KR433 (D1)		IC15 (H6)	QC510 (F3)	
ER7 (C0)	KR434 (B1)		IC17 (F5)	QC511 (F3)	
ER8 (C1)	KR435 (D1)		IC18 (G6)	QC512 (F3)	
ER9 (C0)	KR451 (B3)		IC19 (F6)	QC513 (F3)	
FR2 (I5)	KR452 (D4)		IC2 (G6)	QC514 (F3)	
FR3 (I6)	KR453 (D3)		IC20 (F6)	QC515 (F3)	
FR4 (I7)	KR454 (D3)		IC21 (F6)	QC516 (F3)	
FR5 (F5)	KR455 (D3)		IC22 (E6)	QC517 (G3)	
FR6 (H6)	KR456 (D3)		IC23 (E6)	QC518 (G3)	
IR1 (H6)	KR457 (D4)		IC24 (F6)	QC519 (G3)	
IR10 (F5)	KR458 (D4)		IC25 (F6)	QC520 (F3)	
IR11 (F5)	OR1 (F5)		IC26 (E6)	QC521 (G3)	
IR12 (E6)	OR10 (F5)		IC27 (F7)	QC522 (G3)	
IR13 (E6)	OR2 (F5)		IC28 (D7)	QC523 (G4)	
IR14 (E6)	OR3 (G6)		IC29 (E6)	QC530 (A2)	
IR15 (F6)	OR4 (G5)		IC3 (G6)	QC551 (E5)	
IR16 (F6)	OR5 (G6)		IC33 (E5)	QC552 (E3)	
IR17 (E6)	OR6 (F5)		IC34 (H7)	QC553 (D4)	
IR18 (F6)	OR7 (D6)		IC35 (E5)	QC554 (G4)	
IR19 (E7)	OR8 (C7)		IC4 (G7)	QC555 (H4)	
IR2 (H6)	OR9 (F5)		IC5 (G6)	QC556 (H4)	
IR20 (E7)	PR1 (H3)		IC6 (G7)	QC557 (H4)	
IR21 (D6)	PR1L (H4)		IC7 (G7)	QC558 (G4)	
IR22 (C7)	PR1R (H4)		IC8 (G7)	QC559 (G4)	
IR23 (E5)	PR2 (H3)		IC9 (F7)	QC560 (G4)	
IR25 (C7)	PR2L (H4)		JC301 (C3)	QC561 (G4)	
IR26 (F6)	PR2R (H4)		JC302 (C3)	QC562 (G4)	
IR27 (F6)	PR3L (I4)		JC304 (C3)	QC563 (G4)	
IR28 (E6)	PR3R (I3)		JC305 (D3)	QC564 (G4)	
IR3 (H6)	PR4L (I4)		JC306 (C2)	QC565 (G4)	
IR30 (F6)	PR4R (H3)		JC307 (D2)	QC566 (H4)	
IR31 (E5)	PR5L (H4)		JC308 (D3)	QC567 (G3)	
IR32 (G7)	PR5R (H4)		JC309 (C2)	QC568 (G3)	
IR4 (H6)	PR6R (I4)		JC312 (C4)	QC569 (G3)	
IR5 (H6)	QR501 (F3)		JC313 (D4)	QC570 (G3)	
IR6 (G7)	QR502 (F3)		JC351 (C4)	QC571 (G3)	
IR7 (G7)	QR503 (G3)		JC352 (C4)	QC580 (B2)	
IR8 (F7)	QR504 (H3)		JC354 (C3)	RC701 (H1)	

*** CONDENSER ***

*** DIODE ***

CD801 (C5)
CD802 (C5)
CD803 (E5)
CD809 (C6)
CD811 (C6)
CD812 (B5)
FD3 (I7)
FD4 (I7)
ID1 (F7)
ID2 (D7)
IZD1 (E6)
RD704 (F2)
RD705 (G2)
RD706 (H2)
RD707 (I3)
RZD701 (E1)
RZD702 (D1)
RZD703 (G2)
RZD704 (F2)
UD901 (F2)
UZD901 (E1)

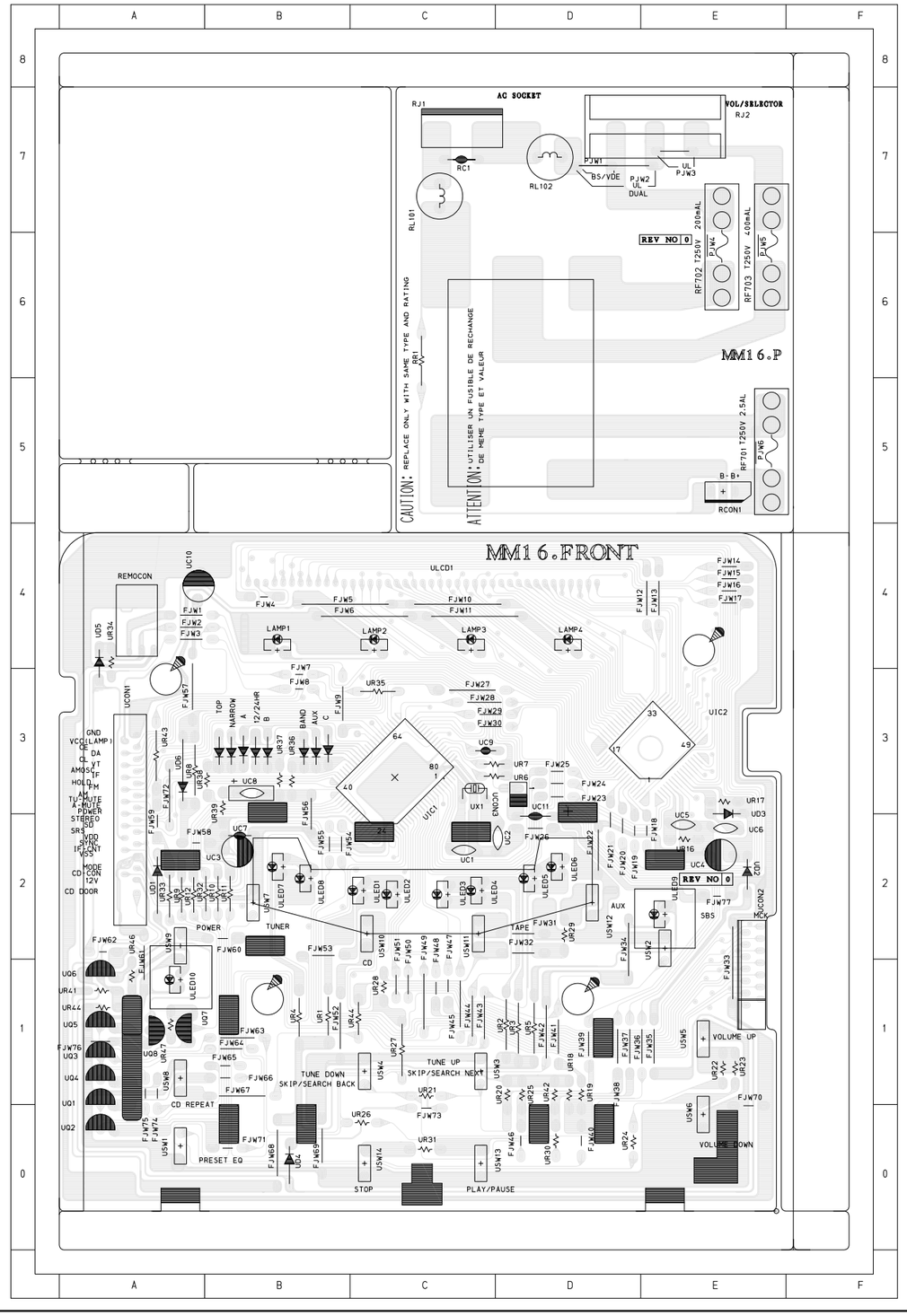
*** IC&WAFER ***

CCON801 (C5)
ECON1 (B1)
ECON1 (C1)
FCON1 (I7)
ICF1 (H7)
ICF2 (H7)
ICF3 (G7)
ICF5 (F6)
JCON301 (C3)
JCON302 (C3)
PCON1 (H4)
QCON1 (A2)
RCW1 (G1)
SCON201 (E4)
TCON1 (G5)
TCON2 (B3)
TCON2 (D6)
UCW901 (E2)

*** TR ***

AQ601 (I3)	CQ803 (B5)	EQ2 (C1)	JQ301 (C2)	JQ354 (C4)	KQ451 (B4)	QQ4 (D6)	RQ703 (F1)	UQ902 (E1)
AQ602 (H3)	CQ805 (C5)	EQ3 (B1)	JQ302 (C2)	KQ401 (B4)	KQ452 (B4)	QQ5 (F5)	RQ705 (G2)	UQ903 (E2)
AQ603 (H3)	CQ806 (C5)	IQ1 (H6)	JQ303 (C2)	KQ402 (B4)	KQ453 (D2)	PQ1 (H3)	RQ706 (I2)	UQ904 (E2)
AQ651 (I3)	CQ808 (D5)	IQ2 (D7)	JQ304 (C4)	KQ403 (D2)	QQ1 (G5)	PQ1L (H4)	SQ201 (F5)	UQ954 (E2)
CQ801 (C5)	CQ809 (C2)	IQ3 (D7)	JQ351 (C2)	KQ404 (C2)	QQ2 (G5)	PQ1R (H3)	SQ202 (E5)	
CQ802 (D5)	EQ1 (C1)	IQ4 (D7)	JQ352 (C2)	KQ431 (D1)	QQ3 (G6)	RQ702 (F1)	SQ251 (E5)	

10-2 Front



*** RESISTOR ***

RR1 (C5)
UR1 (B1)
UR10 (B2)
UR11 (B2)
UR12 (A2)
UR16 (E2)
UR17 (E3)
UR18 (D0)
UR19 (D0)
UR2 (D1)
UR20 (D0)
UR21 (C1)
UR22 (E1)
UR23 (E1)
UR24 (D0)
UR25 (D0)
UR26 (C0)
UR27 (C1)
UR28 (C1)
UR29 (D2)
UR3 (D1)
UR30 (D0)
UR31 (C0)
UR32 (B2)
UR33 (A2)
UR34 (A4)
UR35 (C3)
UR36 (B3)
UR37 (B3)
UR38 (B3)
UR39 (B2)
UR4 (B1)
UR41 (A1)
UR42 (D0)
UR43 (A3)
UR44 (C1)
UR44 (A1)
UR46 (A1)
UR47 (A1)
UR5 (D1)
UR6 (C3)
UR7 (C3)
UR8 (A3)
UR9 (A2)

*** CONDENSER ***

RC1 (C7)
UC1 (C2)
UC10 (A4)
UC2 (D2)
UC3 (B2)
UC4 (E2)
UC5 (E2)
UC6 (E2)
UC7 (B2)
UC8 (B3)
UC9 (C3)

*** DIODE ***

12/24HR (B3)
A (B3)
AUX (B3)
B (B3)
BAND (B3)
C (B3)
NARROW (B3)
TOP (B3)
UD1 (A2)
UD2 (E2)
UD3 (E3)
UD4 (B0)
UD5 (A4)
UD6 (A3)

*** TR ***

UQ1 (A1)
UQ2 (A0)
UQ3 (A1)
UQ4 (A1)
UQ5 (A1)
UQ6 (A1)
UQ7 (A1)
UQ8 (A1)

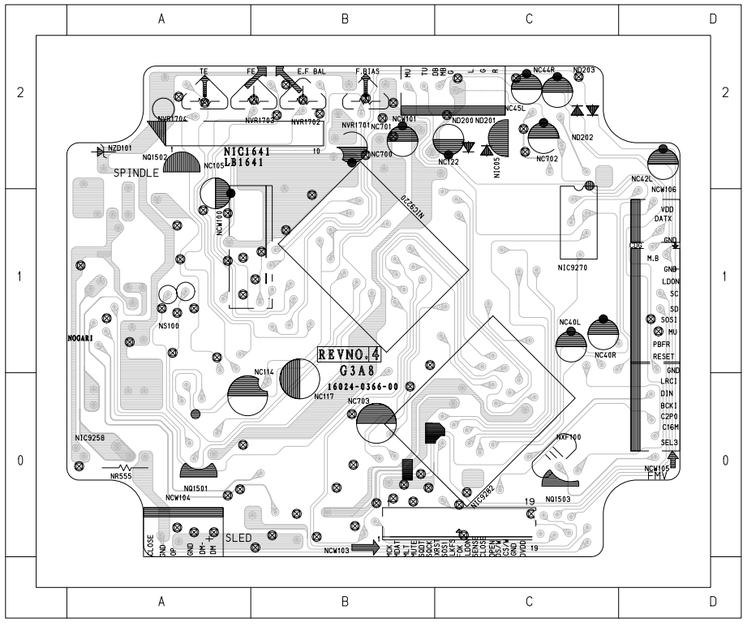
*** IC&WAFER ***

ACON1 (B5)
RCON1 (E5)
UCON3 (D3)
USW1 (A0)
USW10 (C2)
USW11 (C2)
USW12 (D2)
USW13 (C0)
USW14 (C0)
USW2 (E2)
USW3 (C1)
USW4 (C1)
USW5 (E1)
USW6 (E0)
USW7 (B2)
USW8 (A1)
USW9 (A2)

*** CHIP ***

10-3 CD

10-3-1 Top View



✱✱✱ RESISTOR ✱✱✱

NR555 (A0)

✱✱✱ CONDENSER ✱✱✱

NC105 (A1)
NC114 (A0)
NC117 (B0)
NC122 (C2)
NC40L (C1)
NC40R (C1)
NC42L (D2)
NC44R (C2)
NC45L (C2)
NC700 (B2)
NC701 (B2)
NC702 (C2)
NC703 (B0)

✱✱✱ DIODE ✱✱✱

ND200 (C2)
ND201 (C2)
ND202 (C2)
ND203 (C2)
NZD101 (A2)

✱✱✱ TR ✱✱✱

NIC05 (C2)
NQ1501 (A0)
NQ1502 (A2)
NQ1503 (C0)

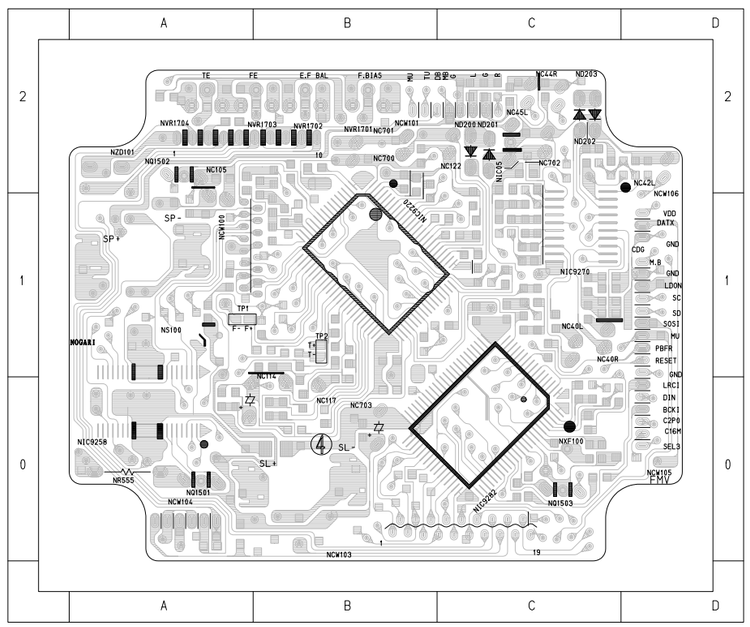
✱✱✱ IC&WAFER ✱✱✱

NCW101 (C2)
NCW104 (A0)
NCW105 (D1)
NCW106 (D1)

✱✱✱ CHIP ✱✱✱

103 (C0)
103 (B0)
NC100 (B1)
NC1000 (C1)
NC1001 (C1)
NC101 (B2)
NC102 (B2)
NC103 (B2)
NC104 (A2)
NC107 (B1)
NC108 (B1)
NC109 (A2)
NC110 (A2)
NC111 (B1)
NC112 (B1)
NC113 (B1)
NC115 (A0)
NC116 (B1)
NC118 (B0)
NC119 (C1)
NC120 (C1)
NC121 (C1)
NC124 (C1)
NC125 (C1)
NC190 (B2)
NC200 (C0)
NC2000 (B1)
NC201 (C0)
NC202 (C0)
NC203 (C0)
NC204 (C1)
NC205 (C1)
NC400 (C2)
NC41L (C1)
NC41R (C1)
NC42R (C2)
NC43L (C1)
NC43R (D2)
NC44L (C1)
NC45R (C2)
NC46L (C2)
NC500 (A2)
NC600 (D1)
NC601 (B1)
NC602 (C2)
NC603 (A0)
NIC9220 (B1)
NIC9258 (A0)
NIC9270 (C1)
NIC9282 (C0)
NL100 (B0)
NR100 (B1)
NR101 (A1)
NR102 (A1)
NR103 (B1)
NR104 (B1)
NR105 (B0)
NR106 (B0)
NR107 (B0)
NR108 (B0)
NR109 (B1)
NR110 (B0)
NR111 (A0)
NR112 (B0)
NR113 (C1)
NR114 (B1)
NR115 (C1)
NR116 (B2)
NR117 (B2)
NR118 (A2)
NR119 (C1)
NR190 (B2)
NR191 (B1)
NR200 (C0)
NR201 (C0)
NR202 (C0)
NR203 (C1)
NR204 (C1)
NR205 (C1)
NR40L (C1)
NR40R (C1)
NR41L (C1)
NR41R (C1)
NR42L (C1)
NR42R (C1)
NR43L (C1)
NR43R (C1)
NR44L (C1)
NR44R (C2)
NR45L (C1)
NR45R (C2)
NR46L (C1)
NR46R (D2)
NR47L (C2)
NR47R (C2)
NR601 (C0)
NR602 (C0)
NR603 (C0)
NR604 (C1)
NR605 (A1)
NR606 (B2)
NR607 (D0)
NR608 (C1)
NR609 (C2)
NR610 (A1)
NR611 (D2)
NR612 (B0)
NR613 (A0)
NRD (C1)

10-3-2 Bottom View



✱✱✱ RESISTOR ✱✱✱

NR555 (A0)

✱✱✱ CONDENSER ✱✱✱

NC105 (A1)
NC114 (A0)
NC117 (B0)
NC122 (C2)
NC40L (C1)
NC40R (C1)
NC42L (D2)
NC44R (C2)
NC45L (C2)
NC700 (B2)
NC701 (B2)
NC702 (C2)
NC703 (B0)

✱✱✱ DIODE ✱✱✱

ND200 (C2)
ND201 (C2)
ND202 (C2)
ND203 (C2)
NZD101 (A2)

✱✱✱ TR ✱✱✱

NIC05 (C2)
NQ1501 (A0)
NQ1502 (A2)
NQ1503 (C0)

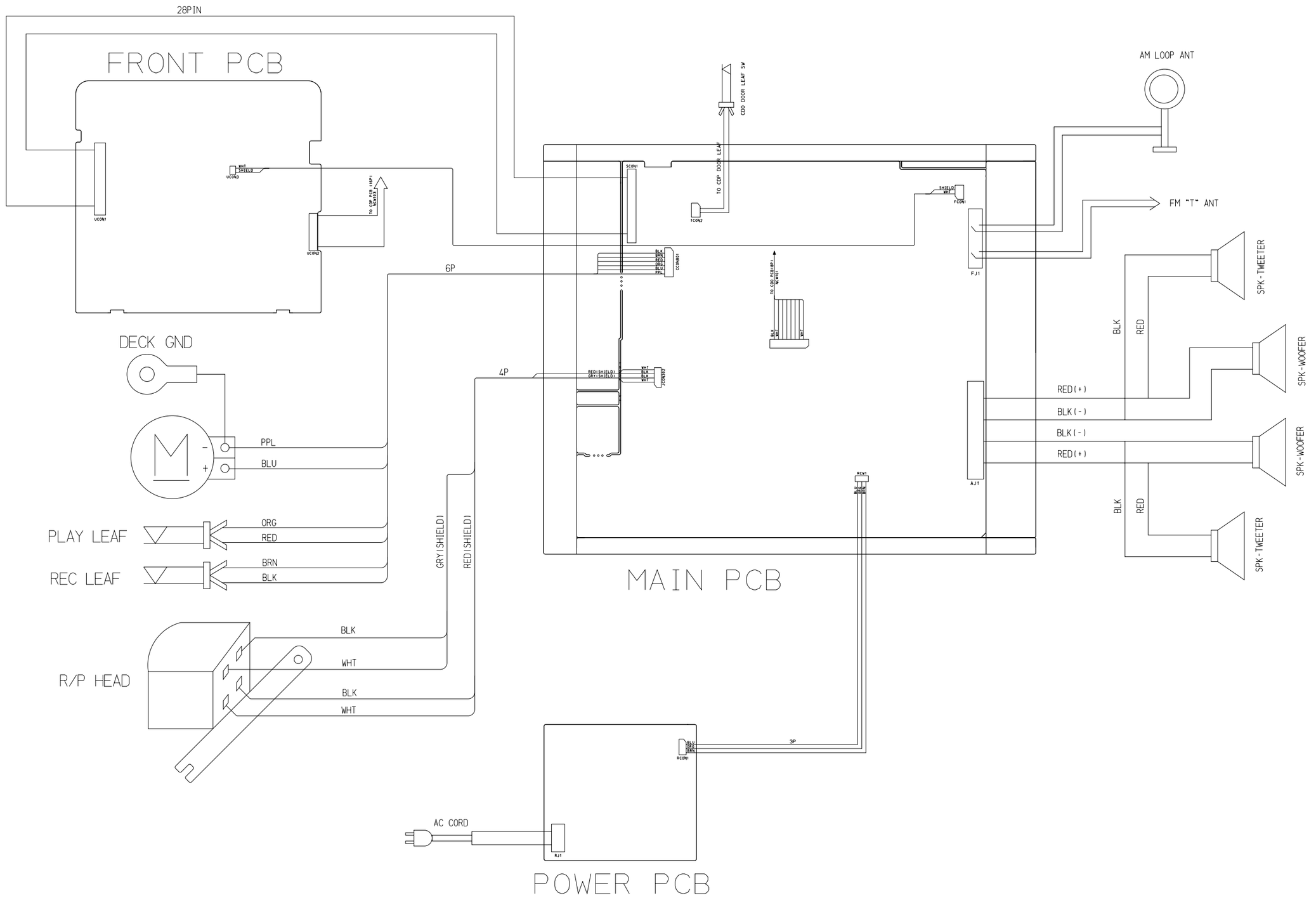
✱✱✱ IC&WAFER ✱✱✱

NCW101 (C2)
NCW104 (A0)
NCW105 (D1)
NCW106 (D1)

✱✱✱ CHIP ✱✱✱

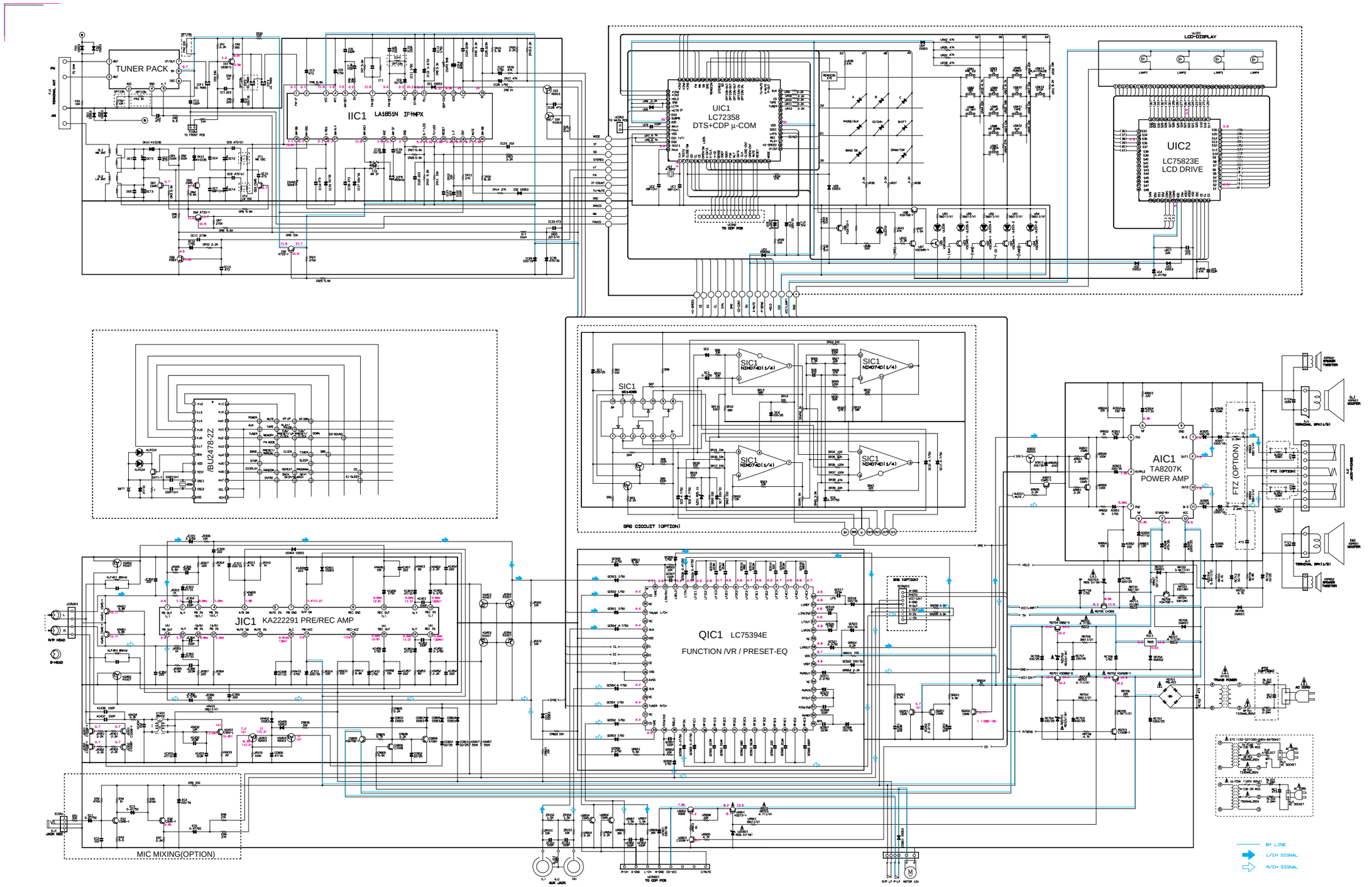
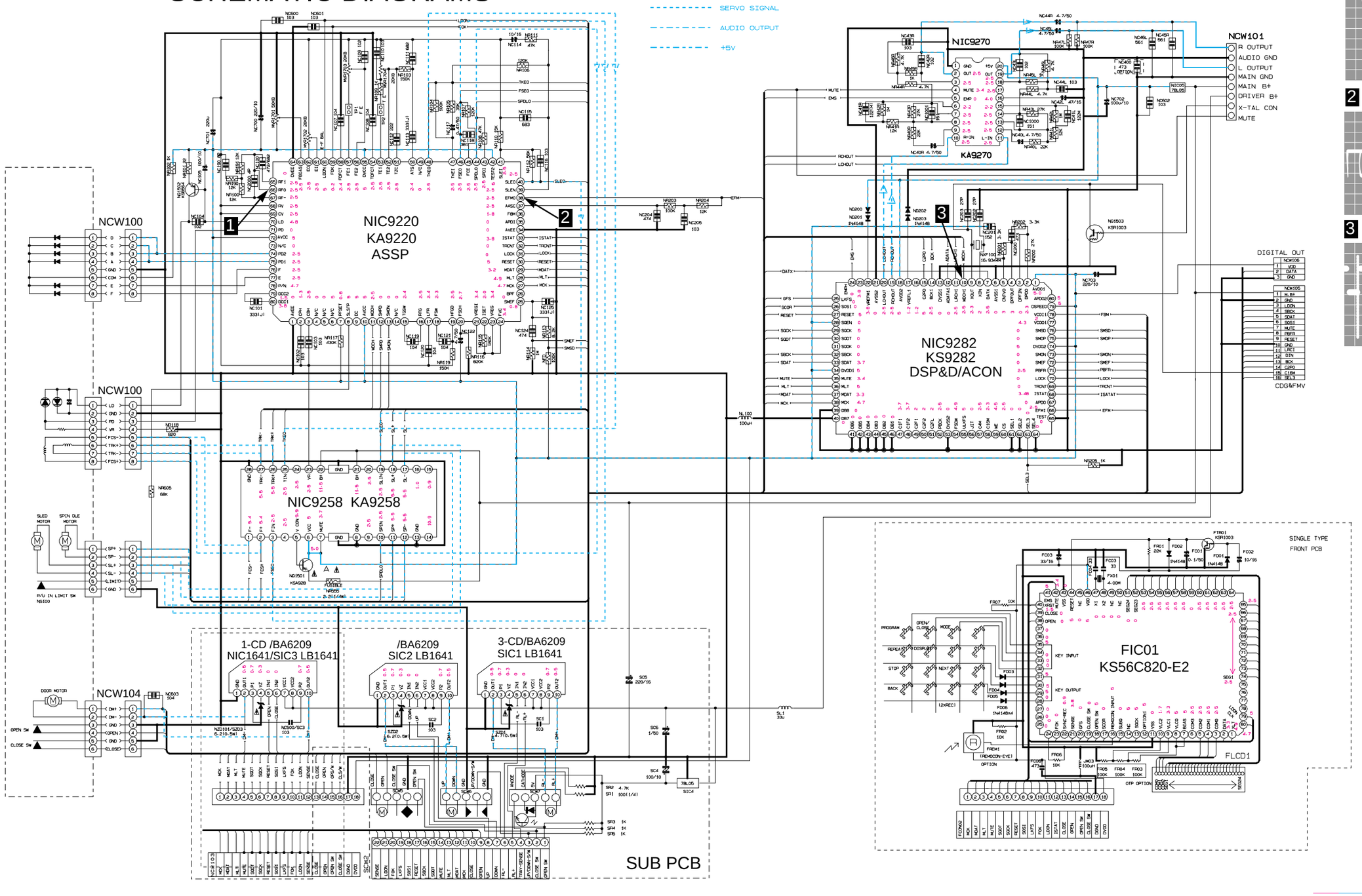
103 (C0)
103 (B0)
NC100 (B1)
NC1000 (C1)
NC1001 (C1)
NC101 (B2)
NC102 (B2)
NC103 (B2)
NC104 (A2)
NC107 (B1)
NC108 (B1)
NC109 (A2)
NC110 (A2)
NC111 (B1)
NC112 (B1)
NC113 (B1)
NC115 (A0)
NC116 (B1)
NC118 (B0)
NC119 (C1)
NC120 (C1)
NC121 (C1)
NC124 (C1)
NC125 (C1)
NC190 (B2)
NC200 (C0)
NC2000 (B1)
NC201 (C0)
NC202 (C0)
NC203 (C0)
NC204 (C1)
NC205 (C1)
NC400 (C2)
NC41L (C1)
NC41R (C1)
NC42R (C2)
NC43L (C1)
NC43R (D2)
NC44L (C1)
NC45R (C2)
NC46L (C2)
NC500 (A2)
NC600 (D1)
NC601 (B1)
NC602 (C2)
NC603 (A0)
NIC9220 (B1)
NIC9258 (A0)
NIC9270 (C1)
NIC9282 (C0)
NL100 (B0)
NR100 (B1)
NR101 (A1)
NR102 (A1)
NR103 (B1)
NR104 (B1)
NR105 (B0)
NR106 (B0)
NR107 (B0)
NR108 (B0)
NR109 (B1)
NR110 (B0)
NR111 (A0)
NR112 (B0)
NR113 (C1)
NR114 (B1)
NR115 (C1)
NR116 (B2)
NR117 (B2)
NR118 (A2)
NR119 (C1)
NR190 (B2)
NR191 (B1)
NR200 (C0)
NR201 (C0)
NR202 (C0)
NR203 (C1)
NR204 (C1)
NR205 (C1)
NR40L (C1)
NR40R (C1)
NR41L (C1)
NR41R (C1)
NR42L (C1)
NR42R (C1)
NR43L (C1)
NR43R (C1)
NR44L (C1)
NR44R (C2)
NR45L (C1)
NR45R (C2)
NR46L (C1)
NR46R (D2)
NR47L (C2)
NR47R (C2)
NR601 (C0)
NR602 (C0)
NR603 (C0)
NR604 (C1)
NR605 (A1)
NR606 (B2)
NR607 (D0)
NR608 (C1)
NR609 (C2)
NR610 (A1)
NR611 (D2)
NR612 (B0)
NR613 (A0)
NRD (C1)

11. Wiring Diagram



12. Schematic Diagrams

12-1 Main



G3A8
SCHEMATIC DIAGRAMS